Telephony.

THE AMERICAN TELEPHONE JOURNAL

Comprising Telephony, American Telephone Journal, Sound Waves, Telephone Magazine and The Telephone

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CONTENTS.

Editorial 57
The Chief Operator. By Elizabeth Stuart Phelps..... 59
The Kansas City Home Telephone Co. By J. C. Kelsey..... 61
Toll Test and "Morse" Boards. By J. B. Thiess and G. A. Joy. 64
Nebraska Joins Fight Against Telephone Trust..... 68
Long Distance Operating. By W. S. Vivian..... 70
Letters from Observing Workers..... 72
British Telephone News. By Abercrombie..... 75
The Legal Side. By A. H. McMillan..... 77
Answers from Experience..... 78
Here and There..... 79
From Factory and Salesroom..... 82
Condensed News Reports..... 85
In the Rural Line Districts..... 87
Out of the Mail Bag..... 88

"There is no stronger inducement to the managers of a public service corporation to serve the public well than a healthy apprehension that a rival concern will do so. It is sometimes argued that the presence of two telephone systems in a given district is a disadvantage to the community, which is best served by one system reaching all subscribers; but one system will never be made to reach all subscribers as cheaply as would otherwise be the case if the possibility of competition is destroyed."—*The Supreme Court of New York in the Yates Hotel Case, decided June 14, 1910. Opinion by Justice Willard Bartlett, Chief Justice Cullen, and Justices Haight, Hiscock and Chase concurring; Justice Gray not voting.*

Will Wickersham Follow the State Attorney Generals?

When George W. Wickersham, attorney general of the United States, was asked why he did not prosecute a combination destructive of competition which took place in Massachusetts, he is reported to have replied that the people of the State, through their representatives, had signified their consent to the merger and that he would follow their wishes.

Within the past few days the people of four great states, through their representatives in the legal departments of the State governments, have shown their feeling toward illegal monopolistic practices of the telephone trust. The issue which has called for the denunciation of the legal departments of the great states of Missouri, Mississippi, Kansas, and, this week, Nebraska, is the attempt of the Bell telephone interests to eliminate competition in the telephone and telegraph business of the country. To wipe out forever the possibility of competitive economies and improvements in the electrical transmission of intelligence is the openly avowed object of this great trust.

No less an authority than Winthrop Murray Crane, senator from Massachusetts, has signed a U. S. Senate committee report stating that the Sherman Law endows the government with sufficient authority to prevent such mergers. This is the same Winthrop Murray Crane, of Dalton, Massachusetts, who, sitting on the executive board of the American Telephone and Telegraph Company, voted for the purchase of certain Independent properties in Ohio and Indiana.

He is the same Winthrop Murray Crane who was in conference with Attorney General Wickersham and President Taft on Tuesday of this week, at Beverly, Mass. Whether Senator Crane was there as an advisor or receiving advice is not known. All parties declare that the subject of the conference is a great secret. The public may not soon know whether the

action of State attorney generals has spurred the President and his chief law officer to warn the telephone trust to cease its illegal and wrongful attempts to monopolize the telephone business, or whether Director Crane, the astute politician, was attempting to convince the representatives of the people to allow the telephone trust to go on in the course it has planned.

But this is an auspicious time for Attorney General Wickersham to show that he will follow the States with equal alacrity when they move *against* a trust.

Construction of Liability Insurance Policy.

It is gratifying to know that nearly every court decision upon the subject of indemnity insurance as affecting telephone companies is favorable to the insured. The phrase "immediate doing of the work of construction" has recently been interpreted in a reasonable manner by the supreme court of Pennsylvania. A policy of the United States Casualty Company assured the Camden & Atlantic Telephone Company against loss from liability for damages on account of injuries suffered by persons not employed by the company at or about the operation of the plant, including construction, maintenance and extension of lines, and making of service connections. It was stipulated in the policy that it did not cover loss from liability for injuries suffered otherwise than during the "immediate doing of the work of construction."

The telephone company, while putting up a line, trimmed a tree on the land of a third person. The owner refused to permit the trimming of the remaining trees unless the tree already cut was trimmed as he desired. While the company's employes were doing this on the day following, a person not employed by the company was accidentally killed, and it was compelled to pay for his death. The insurance company contended that it should be held not liable to the telephone company on the ground that the injury was not suffered during the immediate doing of the work of construction and was therefore not covered by the policy.

In discussing the policy the court said:

"The word 'immediate' is not used to define or qualify the term 'work of construction'; it is used simply to limit liability for loss resulting from accidents happening in the doing of the work, and that work being of course construction work. Whatever may fairly and reasonably be regarded as such work falls within the protection of the policy. The word 'immediate' has no significance in this connection. * * * *

"If work of construction the first day, it was quite as much work of construction the second day. To call it anything less is to give the saving clause in the policy a comprehensiveness that the parties themselves, in view of the nature and character of the enterprise entered upon, and the purpose of the insurance, could not have contemplated."

Camden & Atlantic Tel. Co. vs. U. S. Casualty Co., 75 Atlantic, 1077.

Margin in Apparatus Adjustment.

Why does apparatus require so much watching and adjusting? A large item in the cost of running a telephone plant is the wages paid to the men who keep apparatus in running order, yet larger and more important is the loss of service. When one considers any detail of the switchboard (except cords) it looks simple enough to make, and be kept in good order indefinitely. For example, look at the two contact springs of a line relay. It is easy to bend them into such a shape that they will have the right clearance when the armature is de-energized and will touch each other with the proper pressure when the armature is pulled up. Further, in a properly designed relay they will keep this adjustment for years, and work splendidly, especially if the cover is kept on the relay to keep out dust. The same is true of many other parts of the switchboard, yet many troubles arise from these sources.

Insufficient margin is responsible for most of this trouble. It is the spirit of doing work barely well enough to pass. When a contact fails to make, sometimes a bare touch will clear the trouble. But a bare touch is not enough. The repairman must see to it that the working margin is ample. Make sure that the contact closes with sufficient pressure to insure its closing always, even if the temperature changes, or the spring weakens a little. Abandon narrow margins. Make each detail thorough and the plant will run with surprisely few troubles from that source.

Signs.

A line of telephone poles set along a highway affords an especially attractive opportunity for bill posters. Even with "Post No Bills" stenciled upon the poles at regular intervals the dispensers of miscellaneous advertisements will assume the risk of prosecution. Very seldom is action taken against them.

The tacks used in nailing the bills are ordinarily provided with large heads, or, worse still, nails may be driven through metal washers an inch or more in diameter. Tin signs held in place by nails are very undesirable.

A pole will soon become studded with tacks and tin washers, and both afford a dangerous trap to catch unthinking, hurrying linemen as they ascend to and descend from their work. A spur strikes a tack, or a tin sign, and the lineman strikes the ground.

Poles at corners, cross-roads and near school houses are most likely to be selected by the itinerant bill posters. These, too, are the poles most often climbed by the linemen.

It is sometimes desirable, on account of the local or public nature of the subject matter, to permit the posting of auction bills, political announcements or public notices in which the community is interested. For this purpose the use of paste is advisable, though the enforcement of such a requirement is uncertain. A mere suggestion to candidates for office or to public officials is sometimes effective, and is about as far as a public utility concern cares to go.

In some cases bulletin boards from one to four feet square are nailed to the side of the pole exposed to the view of the passers-by. These are almost as dangerous as the other things mentioned, as the lineman usually forgets the board is there until he has come in contact with it on his downward journey.

Rather than arouse public prejudice by insisting upon the removal or destruction of such boards used for the benefit of the community at large, it is usually possible to set a short post to one side of the pole for the support of the sign bulletin. The expense of this can be but small and it will have the desired double effect of insuring employes from accident and avoid arousing undesired public sentiment.

The Chief Operator

By Elizabeth Stuart Phelps

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Except for the noise of the storm, the exchange was noticeably quiet. For an hour calls had been few; when they came they tangled and overlapped as if from some general cause affecting particular cases. Men were occupied with facing the weather, or hurrying home from it. Many mothers had gone out with umbrellas and little coats to bring children back from school. There was a lull in the demands upon the wire, which for a small country exchange was rather a busy one. Now and then a drop fell, or a young voice called "Number?" and between the whiles the girls chattered disjointedly, as girls do when they have half a chance, or looked dismally out upon the rain from the drowning windows. There were two girls, known as Molly and Mary, and the chief operator, held in respect by them, not only for a certain power to enforce official authority, but because she was a married woman, and Molly and Mary were at an age when this circumstance appeared of more importance than it ever does before or after. The effect was depleted a little by the fact that Mrs. Raven was a widow; but she was quite a young widow, and still attractive—who could have said why? Of beauty, she had little or none, but the eye remained upon and returned to her. The girls thought it was an "air" she had, the fit of a shirtwaist, the hang of a skirt, the way of braiding her bright hair below the head-receiver. An older or finer observer would have said, "It is her expression."

She Glanced Over Her Shoulder at the Advancing Terror.

This was self-possessed, but gentle; the old-fashioned word modest might have said it better than any of the newer feminine adjectives. There was a firm curve to her full, irregular lip, which every operator knew and regarded, but her clear eyes, wide and warm, found it more natural to plead than to command. Her features, her gestures, her voice appealed. She was without self-assertion. This, one would soon have determined, was not from deficiency in force, but from the acquisition of a quality which is the essence of force, although it may seem at first to be antagonistic to it. In some way, in some form, life had taught her to disregard herself. Even the girls perceived that their young chief was not uppermost in her own thoughts. They supposed it was because she was a widow.

It had rained continuously for three days and nights, the river was swollen and perturbed. It was not a very broad river in its normal condition, but a deep one, and swung upon a powerful current. Now it had risen and looked unnaturally large; the banks at that point were low, and the exchange stood with a hundred feet of the water. This gave a cool, agreeable outlook, which the chief operator liked in summer, and at which she glanced gratefully whenever she could. It was August—the scorching August of 1908. She sat at her desk apart from her staff of two, beside the large, low window. The exchange stood by itself—a wooden building, well put together; there was a small grocery store upon the first floor; the telephone occupied the second story; the grocer was an old man, and sometimes walked a part of the way to protect Mrs. Raven when she went home to her stepmother's house, two miles down the desolate riverside, at half past nine at night; after that no woman remained in the exchange, and the night operator came on duty.

The town had the wide spaces and uncertain comforts of the Territory. The telephone was cherished accordingly. It was still treated like a miracle.

Sarah Raven sat at her desk and looked thoughtfully into the storm. It was toward the end of the month, and the great drought had broken, only to be renewed in a fiercer form after passing relief. Meanwhile the dark weather had something of the effect which the interruption of drought always has—finding one less grateful than one should be, because one has become so accustomed to sunshine that its absence influences the spirits to the defiance of the season. Mrs. Raven was tired with the season's work, and somewhat pale. She was a compact little figure of a woman; her black skirt and white waist with the black tie at her throat looked like a uniform or a habit upon her. She sat a trifle averted from the girls, the profile of her face and delicate bust against the long window set in a mist of rain and river. The head-receiver gave a Greek look to the American working-woman.

More than the sadness of storm was on her that afternoon, and as the day declined this increased. She attended listlessly to her duties when the girls called: "Number? What number?" and her eyes returned to the bloated river. What mattered a creeping tear if the river alone could see? This was August the 28th. Tomorrow would be one of the anniversaries of which people who know life say that they are "days to be got over." Tomorrow would be— From the pang of it she tried to forget, and then for the love of it she determined to remember, and then she dashed forgetting and remembering from her and whirled upon her revolving chair.

There was a sudden acceleration of demands upon the exchange. Calls came in from everywhere—most of them were impatient and many irritable. Wives were summoning husbands and husbands reassuring wives. "The storm is so bad—do get home! The house shakes, and the river frightens me. Hurry home, Harry, do!" "Don't be anxious, Sue, if I'm late tonight. It's pretty bad and hard going. I'll get there sometime." Messages rained as hard as the storm. The drops upon the switchboard clattered fast.

"What number?" asked Molly.

"Chief operator?" called Mary.

"Chief operator," said Mrs. Raven instantly.

The wind had mounted in the last half-hour, and buffeted the exchange, which shook in the grip of it. The river ran angrily, and took on a frown as the early twilight of the storm descended. Between the three sounds—the threat of the water, the onset of the wind and the complaining of the rain—it was hard to hear the slender cry of the wire. The girls had ceased to chatter, and listened sedulously.

The electric bulbs, staring with their indifferent eyes behind their softening shades, brightened as the room darkened; for an unnatural dusk had set in upon the place. The switchboard itself wore a curious look, almost an expression like that of a face—a consciousness. It had an air of power before which the girlish figures playing upon it were trivial and inefficient—the puppets of a mystery which might turn master when it appeared to be most slave. Somehow the rage of the river and the storm added to this impression; as if the elemental forces—water, wind and electricity—had combined into insurrection against human control.

If Mrs. Raven felt this, she had not time to think it; she had no time to think at all before there came quivering down the wire from her chief at headquarters, some fifteen miles upstream, an order before which she stiffened into military attention. Now her voice rose like a thing that was trying to fly, and grew a trifle shrill; then it fell into the low, sustained telephone tones:

"What did you say? Please repeat. It is very noisy here. The storm—Please repeat. I say . . . More distinctly . .

"....*What*? I don't get it all. Something ails your transmitter—I can't make it all out....only a few words....*What*?"

She had begun to tremble now; her bright head with its Greek head-piece like a fillet, shook, and her hands. The operators at the switchboard had snatched at the sense of the message, and she could hear them crying out between disjointed fragments. Now the disability in the current—or perhaps it was the interference of the storm—had for the moment succumbed, and the call from headquarters, peremptory and clear as cut glass, came to her ears with the insistence of irrevocable catastrophe.

"The dam is going down. The river is breaking loose. Run for your lives! You have no time to spare. Notify anybody you can, but fly for your life! Do you hear me? Good-by."

"I hear you perfectly," said Sarah Raven. "I thank you for notifying me. Good-by."

Her chair whirled, but she did not leave it.

"Girls—" she began; but the girls had already plucked the danger from the wire and had melted from the switchboard madly; they were flitting and screaming like the flock of birds swaying outside the window—little beings seeking shelter from fate, and fussily complaining of it.

"You can go, Molly and Mary," said the chief operator quietly. She put out her hand for her official directory.

"Mrs. Raven! Mrs. Raven!" cried Molly. "Why don't you come, too?"

"Mrs Raven!" called Mary. "Dear Mrs. Raven! Hurry! .....Mrs. Raven, ain't you coming with us?"

girls. I have my subscribers to think of first. Good-by, girls, good-by."

The girls dashed at her and kissed her and pleaded with her; but she repeated obstinately. "Good-by, girls," and so they turned, sobbing childishly, thinking of themselves, as girls do, and started for the stairs. At the top of the long flight Mary looked back and cried out once more:

"Dear Mrs. Raven, don't you want me to stay, too?" But Sarah Raven did not answer. It was doubtful if she heard. Her record of listed subscribers wavered in her hand, but her voice did not shake at all.

As Mary went down the stairs she heard it echoing through the empty exchange.

"Is this 122, ring 2?"

The young chief was calling her subscribers. She was about to warn them. Mary knew that Mrs Raven meant to warn them all—all who were in danger and had not been notified. There were forty of them in the lower valley. At the foot of the stairs, tumbling out pellmell, the girls heard one authoritative order—their last—from the exchange above:

"Tell the grocer. Tell Mr. Rice! He's old! He needs plenty of time!"

Sarah Raven left her desk and went to the deserted switchboard. She had removed her head-receiver to do so, and put on one belonging to the girls. She sat at her post with a composure which affected every muscle; if it did not reach the nerve, one watching her would not have known it. But there was no one to watch. She was not thinking of herself at all—not yet. She felt in some subterranean corridor of her being that the moment would come when she should, but dismissed the idea as an interruption to her duty. To this she set herself with a passion that obliterated everything else gloriously; as passion does when it is right enough.

If anything that she did in that whirlwind of mind and heart could be called deliberate, she had deliberately chosen to call 122, ring 2, the first of all. It seemed to her that she had the right to so much—and the house was very near the water.

"For father's sake," she thought. "She was father's wife and she's been a good stepmother to me."

Flashing and fading as soon as they had flashed, she saw the comfortable, commonplace things that signified home to her—an orderly sitting-room with a hot Rochester burner on the center table; a red silk shade; a light-wood blaze sparkling on the hearth for her when she should drag herself in, drenched and tired; the table set for supper, with willow ware, in the dining-room beyond; a portly kindly figure trundling in a blue cotton dress and white apron across the room to say: "Land! You must be frazzled out!" As the door swung back she could see her husband's crayon portrait above the mantlepiece.

Her voice pierced the turmoil of water and wind with an astonishing self-possession:

"Mother! Run for your life! The dam is broken! Don't wait for anything—run! . . . No, I can't come yet—No, it doesn't matter about me . . . not till I've warned my subscribers . . . Oh, I must take time to say—you've been a good mother to me . . .No, no, no! I can't do it! Good-by!"

(To be continued.)

The Kansas City Home Telephone Company

Our Youngest Giant—A Surprising Achievement—Third in Gross Earnings—A Healthy Plant

By J. C. Kelsey

Modesty and Kansas City do not seem to be natural bedfellows.

Yet, somehow, the Kansas City Home Telephone Co. has grown up so quietly and so quickly that we are prone to wonder why Kansas City has been so quiet about it.

Four successful companies have reached over the million mark annually.

The Tri-State, the Kinloch, the Kansas City Home and the Keystone.

It was a surprise to me to learn that the Kansas City Home ranked third in gross receipts.

Besides, two of these great successes are located in Missouri.

Apparently Missouri appreciates the importance of such healthy competition, because the state has begun to prepare an ouster suit against the Bell.

No concern on record has so arrogantly over-ridden all sense of justice, outraged all law and violated the confidence of its own investors so flagrantly as the Bell.

It remained for Missouri to give object lessons, and she gave us the Kinloch and the Kansas City Home.

Kansas City is a live town. It lies close to the original garden of Eden. It is the gateway of the great Southwest. It is the great agricultural implement city of the world.

It is a city of well-defined enterprise. Its parks and boulevards are unexcelled and some day, before the veterans of the Spanish war are extinct, a depot worthy of a name may be built.

It is the drinking fountain for thirsty Kansas, and its weekly bank clearings are a marvel.

It is fortunate, indeed, that the minds who foresaw the possibilities of an Independent telephone plant in Kansas City have been able to finance the property to its fullest needs.

A swiftly growing city is more likely to bring disaster to a telephone enterprise than one which is slowly declining.

Kansas City people have infinite patience. They know all about monopoly. They have had years of early experience with Corrigan, Alonzo Burt and other imitators of Czar Nicholas I.

They know all about prosperity, and hard times, and the fickleness of the Kansas river.

They are essentially a game and sturdy people. Brann, of Waco, once said: "It has not been many years since the women of the leading families gathered brush on the river bank to fry the cat-fish caught by their husbands." But this only indicates the pioneer courage and the hopefulness necessary to a great city.

Being so long scorned by the predatory interests, it would seem that Kansas City knew nothing but Czarism, and the lot of the Kansas City Home Telephone was essentially to be a hard one.

But such was not the case.

Kansas City welcomed relief. She needed relief. Bell telephone service was awful. So long accustomed to throttling the citizens, they did not realize the march of events. They were late in giving Kansas City even most ordinary improvements.

As a result, Kansas City people stormed vainly and furiously at one another through Blake telephones.

A magneto switchboard, bought cheap in Cincinnati, after it had been discarded by the phlegmatic denizens of that city, connected the awful Blake telephones.

To show their spite, the Bell placed the worst telephone at the city counsel's office, in the City Hall.

I don't know how they succeeded in making that line so noisy, but it was worth the price to see an exasperated lawyer using that telephone.

For eighteen years this telephone purposely maddened every city official.

For eighteen years no one could remember a visit from the repairman.

Yet, in spite of such maintenance, the Missouri & Kansas Telephone Co. never paid minority stockholders more than 6 per cent. It earned 35 per cent.

But in 1902 the city counsel remembered his telephone service during the prosecution of a suit to compel the Bell to reduce rates, and he certainly got even.

It is one of the strangest things in the world how the Missouri & Kansas Telephone Co., located in a most prosperous community, came to be such a debt-ridden concern.

Its present plight is sad. Sued by Kansas and hounded by Missouri, broken in pocket, it presents a painful picture.

But I am wrong. The Bell is not in any plight. It is the minority stockholder who is in a bad way. This goat, this same old Bell victim, always gets the benefit of plights.

Nepotism may be responsible. An Edward J. Hall is vice-president of the A. T. & T. Co. Another Hall has been general manager of this prodigal Bell telephone plant. Strange coincidence! They are uncle and nephew, or in some way related.

Nepotism is usually fatal. Dun or Bradstreet can show you that nepotism kills the majority of business enterprises in which it occurs. It certainly has been fatal to the Missouri & Kansas minority stockholders.

The franchise of the Kansas City Street Railway has expired.

It wants a new one.

It wants permission to capitalize for $33,000,000.

It wants permission to capitalize every man, woman and child in that city at $200 per head.

In other words, each man, woman and child is called upon to contribute $20 annually to pay the expense of the slow-moving juggernauts of that city.

Every bale of hay ever devoured by a mule, every shoe cast for his feet, every mule and every barn and every worn-out cable must be hiding serenely somewhere in that $33,000,000.

Both telephone companies, holding each other in check, have not asked for returns on even $15,000,000, or less than one-half of that demanded by the vandals of the streets.

Double burden, forsooth! It does not compare to their single burden.

In 1902 the construction of the Kansas City Home Telephone Company was under way.

Walter C. Polk had charge of its construction. No living man has had a wider experience in telephone plant construction—and Kansas City was the climax of a long chain of experiences.

At that late day the underground work was confronted by many problems, and all were nicely solved.

The Kansas City Home interests operate in both Missouri and Kansas, in the following counties:

Missouri.

Jackson,	Ray,	Pettis,
Platte,	Carroll,	Bates,
Clinton,	Vernon,	Clay,
LaFayette,	Cass,	Caldwell.
Johnson,		

Kansas.

Wyandotte,	Douglas,	Leavenworth,
Franklin,	Atchison,	Osage,
Doniphan,	Anderson,	Allen.
Johnson,	Neosho,	Miami.
Montgomery,		

Connections with the Kinloch are made at Sedalia, Mo.

Connections with the Gary properties are made at Nevada, Atchison and St. Joseph.

With Topeka, St. Joseph, Leavenworth, Atchison, Lawrence in immediate connection, and the Kinloch lines available, the Kansas City Home is practically invulnerable to attack.

Chicago is the only point not reached by the Kansas City Home lines.

As Kansas City is a competitor and not a customer of Chicago, there is no need of such a connection.

The station growth of the Home Telephone Co. is recorded as follows:

March 31—1905	12,380
1906	16,831
1907	22,661
1908	25,347
1909	28,447
1910	32,697

The bonded liabilities per telephone run under $100.

The bond obligation is limited to $3,000,000, making about $92 per telephone.

This is a most enviable condition, and indicates one of the best bond securities in America today.

Dealing with interurban and hydraulic securities as an engineer, and reporting on many other financial plans, I fully believe that Tri-State, Kansas City Home, Kinloch and Keystone bonds are the safest 5 per cent securities in America.

The revenue per telephone averages $41.35.

This lacks 20 cents of equaling the Kinloch average, but when one considers the different location, the earnings of the Kansas City Home are quite remarkable.

The great Bell average for all America barely equals the Kansas City Home in gross receipts.

The total cost of operating averages $22.71.

The net earnings of the Kansas City Home Telephone Co. were as follows:

Gross income	$1,263,975
Cost	694,500
Net earnings	$ 569,475

Percentage of expense to earnings, 55 per cent.

Summing up, we have—

Net earnings	$569,475
Reserves	150,000
Net for interest	$419,475
Interest	215,910
Net for dividends	$203,565
Dividends, 6 per cent	180,000
Surplus	$ 23,565

On a station basis, the average Kansas City Home performance is as follows:

Earnings	$41.35
Cost	22.71
Net	$18.64
Reserves	5.00
Net for interest	$13.64
Interest	7.06
Net for dividends	$ 6.58
Dividends	5.80
Surplus	$0.78

When the Kansas City Home Telephone Co. has reached the age of the Kinloch and Keystone properties, its operating costs will come down to $20 or less. There will be more concentration.

If any one has the idea of frenzied finance in connection with Independent properties, he can study the Tri-State of Minneapolis with $6,000,000 of property and $1,000,000 of bonds.

The Kansas City Home has an $8,000,000 property with $4,000,000 bonds.

The factor of safety is not only 2 per cent on physical value, but on earning power as well.

So far, the Kansas City Home Telephone Co. has spent $845,809 on maintenance and upkeep of plant.

Since its organization, there have been practically 140,000 station years, making a maintenance and reconstruction rate of $6 per station.

With $5 added for renewal reserve purposes, there is a total of $11 per year available for maintenance and reconstruction. It is sufficient for all purposes. Bonds will never be disturbed, nor will the stock.

The company had $300,000 of reserves on March 31, 1910.

There is also a surplus of $300,000.

Plant additions for the year have been met from sale of treasury stock, which was put on sale and over-subscribed at par.

The company handles 390,000 calls daily. The use of a telephone practically thirteen times a day shows the close relation of the Home service to the people.

There are 1,129 employes on the pay roll.

The old Bell rate was $96 for business.

The city made them show cause why they should not reduce their business rate to $60.

The referee sustained the city, but the Missouri court seemed to think otherwise.

The Bell arrogantly insisted that it was losing money at $96. But you know it was not.

When the Kansas City Home became a settled fact, no one had to go into court to force the Bell to reduce.

It was glad to do it, in order to survive.

It certainly teaches us that competition furnishes the only guarantee of justice to the public.

The personnel of the Kansas City Home Telephone Co. is as follows:

Officers.

Joseph J. Heim, President.
Henry Koehler, Vice-President.
O. C. Snider, Vice-President and Treasurer.
Howard Snider, Secretary.

Directors.

C. O. Baxter,	Arnold Kalman,
Lee Benoist,	W. J. Kavanaugh,
Walter Dickey,	Henry Koehler,
J. J. Heim,	A. W. Lambert,
Howard Snider,	O. C. Snider.

Mr. O. C. Snider is general manager and is the ruling spirit of this great success. He is also president of the Long-Distance Company. He is well-known in telephone circles, director of the national body, and a willing worker for a good cause.

Joseph J. Heim is president of the Home Company. His strength and courage and usefulness to Kansas City are well known.

W. C. Polk has gone back to his first love, as it were, and holders of both bonds and stocks may have more assurance than ever.

C. J. Myers is the active spirit of the Long Distance company. No Missouri or Kansas convention ever missed his help.

Fortunate, indeed, is Kansas City that the right group of men have taken hold of this great enterprise and made it worthy.

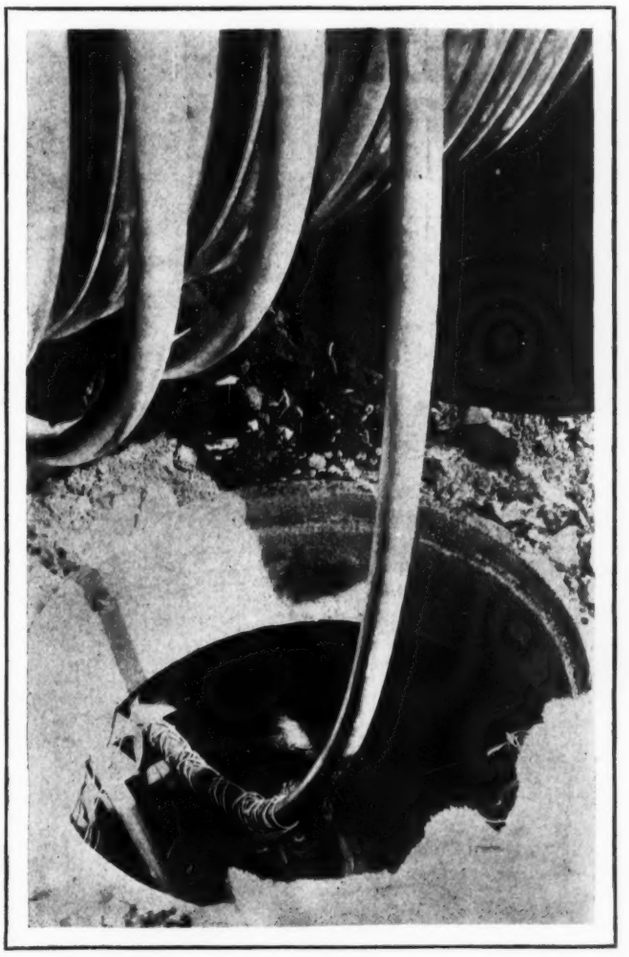
MORAL: Competition is the public's sole defense.

Installing Cable at Garnett, Kansas.

The accompanying photograph showing a cable reel standing in a comfortable, shady spot, is proof of the successful conclusion for the Independents of a movement at Garnett, Kansas, in which a great deal of strategy was employed on both sides, ending in an Independent victory.

Independent Cable being Installed at Garnett, Kansas After a Lively Battle in which the Independents were Victorious.

The prime mover in the undertaking to establish a system of undoubted independence, James F. Barnett, is standing at the left of the reel. Mr. Barnett has modestly placed himself somewhat in the background, but all will see that he is looking forward, and in every respect typifies the attitude of "the man behind the gun." When he unlimbers and gets into action it is time to watch for the flying fur of any Bell agents who are in the vicinity. Suffice it to say that Garnett has an Independent telephone system which is going to be strictly up-to-date with a high grade switchboard, and cable, both aerial and underground, the latter of which is evidenced by the second view which only succeeds in partially obliterating the countenance of Mr. Kelley, the official cable guider of the construction crew.



Last Manhole of Garnett, Kansas System — Kelly in the Pit.

Inquiry Into Caldwell's Stock Scheme Postponed From Last Week.

Arguments on a motion for an injunction pendente lite in the case of Charles H. Armstrong and others against the Cumberland Telephone and Telegraph Company, the Southern Development Company, Jesse M. Littleton, of Nashville, as receiver of the Landis Banking Co., T. D. Webb, trustee, and John T. Landis, of Nashville, Tenn., were to have been made in the United States District Court at Louisville, Ky., July 8, but were postponed, by agreement of attorneys, until July 15.

Bell Company to Fight Los Angeles Rate Ordinance.

The Pacific Telephone and Telegraph Company through its chief counsel of San Francisco, has filed in the United States Circuit Court a petition for an injunction restraining the city of Los Angeles from enforcing the ordinance regarding rates which was to go into effect July 1. The company seeks to prevent the enforcement of this ordinance on the ground that the rates made compulsory therein are confiscatory.

Toll Test and Morse Boards

By J. B. Thiess and G. A. Joy

Test and "Morse" boards can be divided into two general groups: one in which cords and plugs are employed in making the various connections, which equipment was explained in an article published in TELEPHONY some months ago; and the other, sometimes known as the cordless board, which eliminates to a very considerable extent the use of the cord. The cord equipment is commonly conceded to be the weakest part of the switchboard apparatus, and therefore any reduction in the use of the cord is beneficial, for it will obviate the additional cost of maintenance as well as eliminate much of the irritating cord trouble which is manifest in a system using cords exclusively. Then, again, by setting aside the use of cords the view of the face of the panel is not obstructed by the many intersecting cords, and the location of equipment in the board is, therefore, greatly facilitated. The above statement might raise the question as to why the cord equipment continues to be in regular demand and remains a live proposition in Morse and test board designs. However, it will be understood upon a more thorough investigation, that each type of equipment has its particular use, and that certain conditions favor an equipment of the cordless type; whereas, a different state of conditions could be more effectively handled by an equipment of the cord type. This discussion can readily be compared to the alternating vs. direct-current power transmission problem, to which much theoretical inquiry and work was devoted in the endeavor to determine which was the better and more efficient method, and which controversy finally resulted in finding a distinct and logical place for each system. Thus, in the case under discussion one finds that for small equipment, in which the amount of apparatus necessary for composite, simplex, and phantom work is limited, a cord equipment is preferable. This is due to the fact that by means of cords a greater flexibility is obtainable; and as the amount of composite and simplex work is rather limited, the face of the panel will not be obstructed, due to the cross connecting cords. However, for a large office, in which a great amount of telegraphic work is carried on and which serves many leased lines, it has been proven good practice to so cable the equipment that a composite set can be permanently wired to each of the toll lines entering the office. In this case, the cordless equipment is a distinct advantage, and this will undoubtedly become apparent to the reader after perusing the following matter:

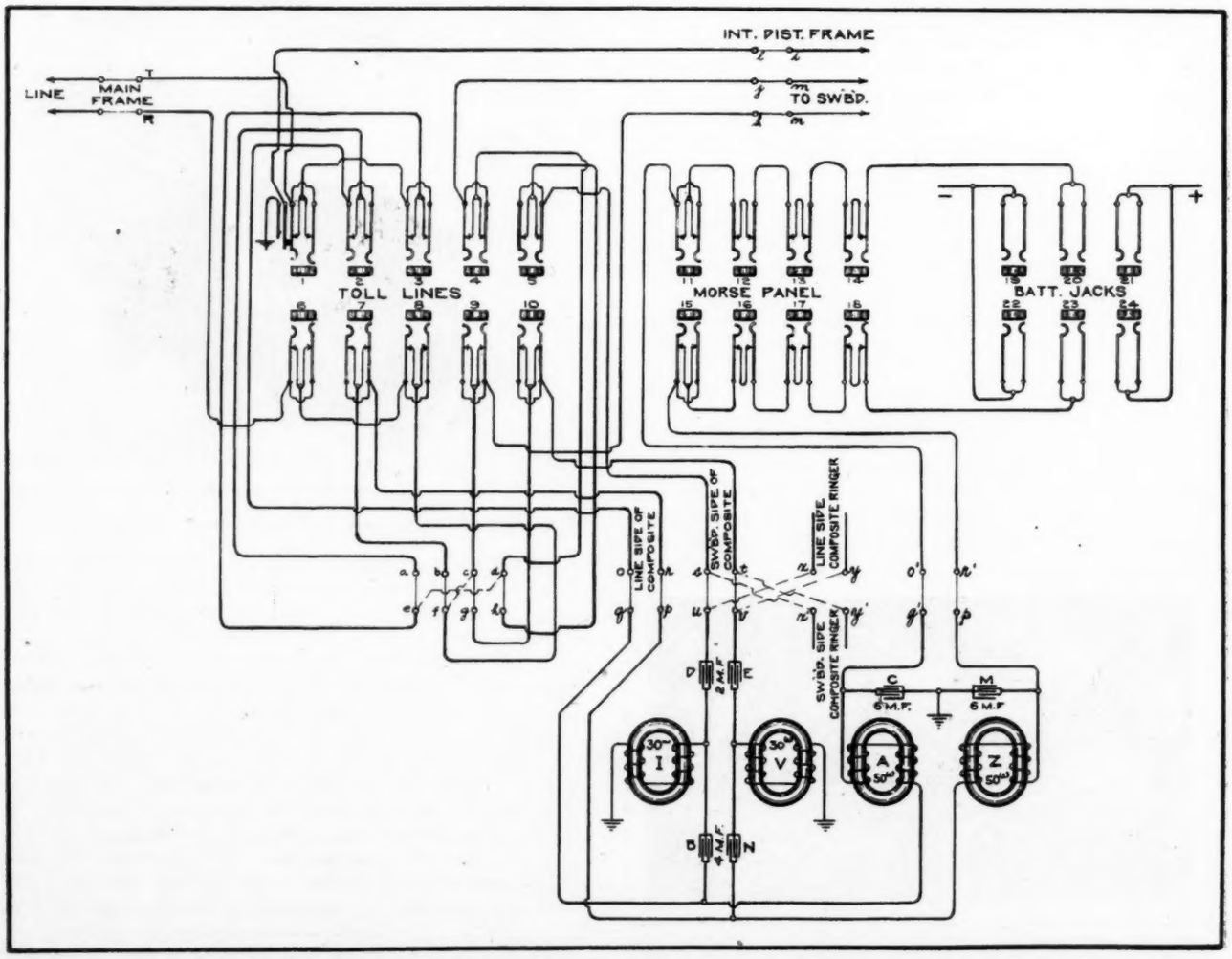


Fig. 1.—Wiring of Toll Line Through Test Board with Arrangements for Making Composite Circuit.

In Fig. 1 is shown a regular toll line wired through the test board. As shown, the line upon entering the office from another long distance exchange is first wired through the regular protection at the main frame. From the frame the tip side of the

line can be traced through the cut-off jacks 1 and 3 to terminal *e* on the composite distributing frame, while the ring side of the line is wired through cut-off jacks 6 and 8 to terminal *f* on this frame. At the frame the line can be cross-connected for either a direct telephone circuit without "Morse" work, or it may be associated with a regular composite set. Since the former of these two involves the simpler operation, this connection will be traced out first. In this case the tip side of the line is cross-connected from terminal *e* to terminal *d*, as shown by the dotted line and the line can then be followed through cut-off jack 4 to terminal *j* on the intermediate frame, while the ring side of the line is cross connected from terminal *f* to *c* and is wired from here through cut-off jack 9 to terminal *k* on the intermediate frame. It will be noted that a third terminal, *l*, is associated with the line on the intermediate frame and that this terminal is wired to a "make" contact on jack 1 at the test panel. The reason for this wiring will become apparent in what follows. It suffices to say for the present that the three terminals, *l*, *j* and *k*, are cross-connected at the intermediate frame to terminals *i*, *m* and *n* respectively. The latter terminals are wired to the position of the toll switchboard at which this line is to terminate.

The above traces a direct telephone connection, and it can be shown how the line can be composited. For this purpose it is desirable to return to the line terminals *e* and *f*, at the composite distributing frame, to which junction the circuit can be traced as in the outline above. Now, since it is desired to composite, the jumper wires *ed* and *fc* are removed and a new set of four jumpers is wired in their place. Thus, terminal *e* is cross-connected to terminal *a*, from which point the tip side of the line can be traced through cut-off jack 2 and through to terminal *o* on the composite distributing frame; while terminal *f* on this frame is cross-connected to *b* and can be traced from here through cut-off jack 7 to terminal *r* on the composite frame. The tip side of this line is then cross-connected to terminal *q;* from here the telephone circuit can be traced through condensers *B* and *D* to terminal *u* on the composite frame, and thence to terminal *x*, through the line side of the composite ringer to terminal *x'* on the switchboard side of the ringer; from here it is jumpered to terminal *s* and can then be followed to cut-off jack 5, and terminal *h* on the composite frame and then by means of jumper *hd* through cut-off jack 4, to the tipside of the intermediate distributing frame. The ring side of the line follows a similar path, which can be traced from terminal *r'* on the composite frame by means of the jumper to terminal *p;* and through condensers *N* and *E* to terminal *v;* and then by means of jumper *hd* through cut-off jack 4, to the tip side of composite ringer, and thence from *y'* on the switchboard side of the composite ringer by means of jumper *y't* to cut-off jack 10 and terminal *g* on the composite frame. The lead is then jumped to terminal *c* and can then be traced by means of cut-off jack 9 to the ring side of the intermediate frame. When the composite ringer is wired in the circuit, *i.e.,* when telephone connections are set up in this particular office, the (solid line) jumpers *us* and *vt* are omitted. However, when the line is simply a trunk line which is looped through the office, in which case telephone connections on the line do not originate at this office, the jumpers just referred to are wired, and in this case the (dotted) jumpers to the composite ringers are omitted.

Having traced the regular telephone circuit for composite operation, it is now essential to follow the path of the telegraph circuit. The leased and regular loop telegraph line jacks are cabled from the "Morse" panel to terminals on the composite frame. The Morse panel tap terminates on terminals *o'* and *r'* on the composite frame. The telegraph circuit on the tip side of the line can, therefore, be traced as follows: from terminal *o'* by means of jumper *o'q'* through impedance coil *A* to terminal *q* and thence by means of jumper *qo* to cut-off jack 2; from here it can be traced to terminal *a* on the composite frame and then by means of jumper *ae* through cut-off jacks 3 and 1 out on the line. The ring side of the line is traceable from terminal *r'* by means of jumper *r'p'* through impedance coil *Z* to terminal *p;* and then by way of jumper *pr* to cut-off jack 7. From here the circuit can be followed to terminal *b*, through jumper *bf* and cut-off jacks 8 and 6 to the ring side of the line.

From the preceding, it must now naturally follow that by jumpering composite frame terminals *a,b,c* and *d* to terminals *e,f,g* and *h* respectively, the regular toll line will be equipped

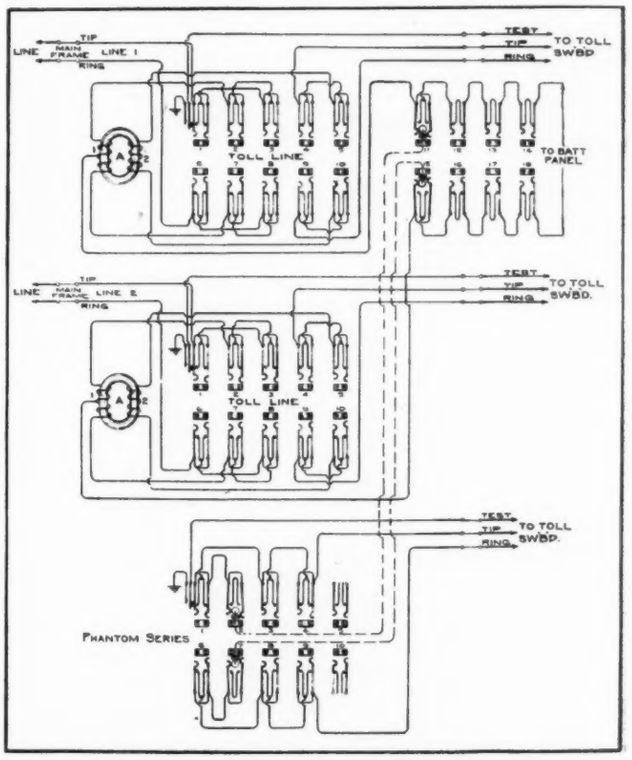


Fig. 2.—Diagram of Connections Which Provide for Setting Up Simplex and Phantom Circuits on Telephone Lines.

for composite service; and that if jumpers *fc* and *ed* are wired and the others omitted, the line is free from the composite apparatus and is to be used for direct telephone work only. In some equipments the terminals *a, b, c, d, e, f, g* and *h* are located on a connecting rack in the rear of the test panel instead of being mounted on a separate frame, as was designated in the foregoing description. When a frame is used these composite terminals may be mounted on an entirely separate frame or be located on a part of the regular intermediate distributing frame. Of these two methods, the one using the separate frame is the better type of construction, since large connecting racks containing many springs should be avoided as much as possible in switchboard designs, as they frequently introduce trouble. Therefore, for an equipment in which the cost of the apparatus is exceedingly high and in which the obstruction of the service of a line necessarily means a considerable loss of revenue, all construction which has the slightest tendency to be productive of trouble should be avoided, even though the cost of the original installation is somewhat higher.

Having traced the telephone and telegraph circuits the use of the different cut-off jacks will now be shown. These jacks are installed to afford a ready means of testing. Thus, if plugs are inserted into jacks 1 and 6, the line may be tested out through the main distributing frame, the remaining portion of the line being cut off. In addition to this, the act of inserting the plug into jack 1 will close the "make" contact associated with this jack, which will place a ground on the lead wired to terminal *l* of the intermediate distributing frame. This ground will actuate all the busy signals associated with

this line, thus keeping the toll operators off the line when it is thus plugged up for a test. If the plugs are inserted into jacks 3 and 8 the line can also be tested out from the main frame; but in this case no busy signal is displayed at the board. The composite set can be cut out by inserting twin plugs horizontally so as to connect the springs of jacks 3 and 4, and 8 and 9. By inserting a twin plug vertically in jacks 2 and 7, the toll line is opened and a test may be made through

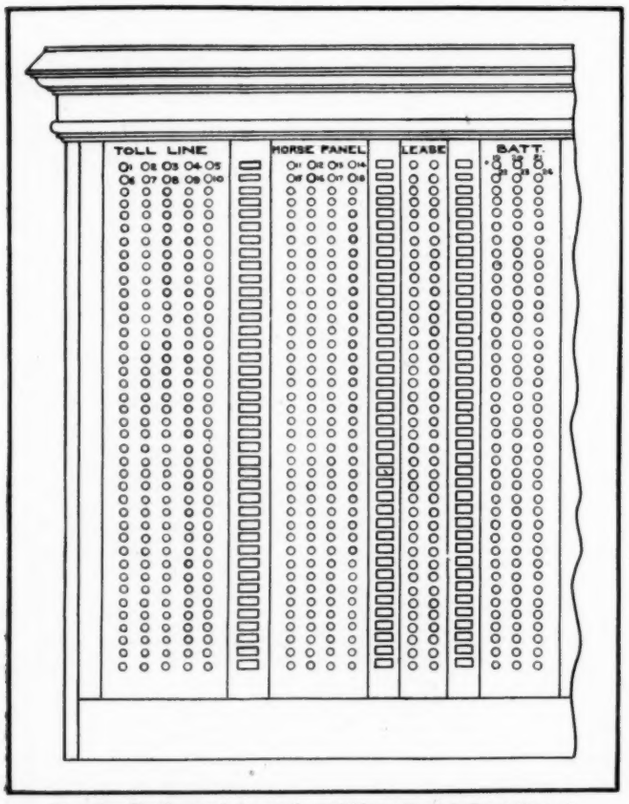


Fig. 3.—Equipment Layout of "Morse" and Test Board.

the composite apparatus to the toll switchboard. By inserting plugs in jacks 4 and 9, a test can be made direct to the switchboard. Short circuited twin plugs inserted into jacks 3 and 8 will cross the line wires. The use of the battery and loop jacks in the "Morse" panel will be explained in what follows in connection with the face equipment.

The circuit used for simplex and phantom work is shown in Fig 2. It must be borne in mind that in simplex work the two line wires of each telephone circuit are operated in parallel for the telegraph circuit, in place of using each lead of the telephone line for a telegraph circuit, as is the case in composite work. Furthermore, for phantom operation two telephone circuits are required, the two wires of each individual telephone circuit operated in parallel constituting one side of the telephone line for the phantom circuit. Therefore, in Fig. 2 there are shown two toll lines entering the office, each of which may be used for a simplex circuit; and by using the two in conjunction a phantom telephone circuit may be constructed. In this circuit the repeating coil method for simplexing and phantom work is indicated; but the same general scheme may be carried out with the retardation coil method. Since the wiring of lines 1 and 2 is identical in the composite panel, the following is a description of line 1 only, which will apply equally well to line 2.

The tip side of the line, after passing through the protection at the main frame, is looped through cut-off jacks 1, 3 and 2 respectively; and from there is wired through winding 1 of coil *A*, through jacks 7, 8 and 6, and thence back to the ring side of the line. From the middle point of winding 1 of coil *A*, the "Morse" tap is wired to jack 11 in the "Morse" panel. The tip side of the switchboard end of this circuit is looped through cut-off jacks 4 and 5, and is then wired through winding 2 of coil *A* to jacks 10 and 9, respectively, and back to the ring side of the switchboard end of the line. Therefore, when it is desired to simplex the above circuit, a plug is inserted into jack 11. This plug is attached to a cord equipped with a plug at the other end, and this latter plug is inserted into a jack to which is connected either the proper telegraph apparatus or a leased line subscriber. If a phantom circuit is to be established, however, the plug inserted into the leased line jack, in the above description, is plugged into jack 2 of the series of phantom jacks, and a similar connection is made between jack 15 of the "Morse" panel and jack 7 of the phantom jack series. This connection is shown in the circuit by means of broken lines between the aforesaid apparatus. It is now possible to follow the tip side of the phantom circuit from the toll switchboard through jacks 4, 3, 1 and 2, respectively, of the phantom jack series, to jack 11 of the "Morse" panel; and thence to the middle point of winding 1 of coil *A;* from here it can be traced through jacks 2, 3 and 1, and 7, 8 and 6 out onto the two line wires of toll line 1. The ring side of the phantom circuit can be traced by means of a similar circuit to and through the phantom jack series to jack 15 of the "Morse" panel and thence to the middle point of winding 1 of coil *A* of line 2, and then out onto the two line wires. From what has preceded, it can be readily seen that the matter of simplexing and phantoming at the "Morse" panel is an easy and rapid operation.

The use of the different cut-off jacks on the toll line, as well as the phantom series, is for testing, as in the composite circuit previously explained. Thus, by plugging into jacks 1 and 6 a test may be made out on the line, the necessary busy test being displayed at the toll board and the switchboard equipment cut off from the circuit, as was the case with the composite panel. By plugging into jacks 3 and 8 the line is free from the switchboard equipment; and in this case no busy signal is displayed at the board; while plugging into jacks 2 and 7 cuts off the line and a test can be obtained through coil *A* to the switchboard. Plugging into jacks 4 and 9 makes possible a test direct to the switchboard. In fact, the jacks in this circuit serve the identical purpose of those shown and described for the composite circuit, and the same operations regarding the plugging up of the jacks will bring about identical results.

The manner of mounting these jacks in the board is interesting and there is consequently shown in Fig. 3 a section of the test panel. As shown in the diagram, the first panel of jacks takes the regular toll lines, each line consisting of five pairs of jacks straight across the panel. These jacks are wired as per the jack series numbered 1 to 10 as shown in the composite circuit Fig. 1 and in the simplex and phan-

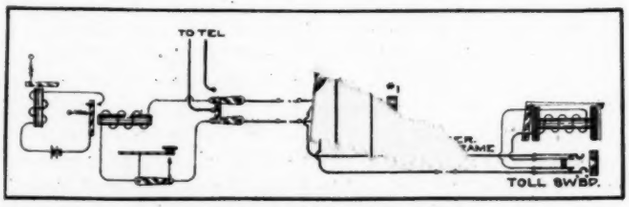


Fig. 4.—Wiring of Leased Lines.

tom circuit Fig. 2. The two upper rows of jacks on the face equipment drawing have been numbered to facilitate the explanation, these numbers being no part of the regular equipment. To distinguish whether a certain set of jacks is wired for composite, simplex or phantom work, the board is equipped with a designation card directly to the right of each set of jacks. It might be well to add here that the two extra jacks in the phantom series of circuit Fig. 2, which are not

wired, are simply placed in the toll line panel to give it a uniform appearance. In the next panel are located the jack series numbered 11 to 15 in the above mentioned circuits. This panel is termed the "Morse" panel since all telegraph connections are put up by means of these jacks. In the next panel to the right are located the regular leased line jacks, to which are wired the leased lines as per circuit Fig 4. These jacks are either wired directly to the telegraph apparatus at the leased line subscriber's station or to four-point switches, as shown in the sketch. The advantage of the arrangement shown consists in that it provides a means by which the leased line subscriber can readily call the exchange when not plugged up for telegraph service. Thus, suppose a subscriber desires telegraph service on some special occasion, outside of the regular scheduled time in the day during which he is plugged up for this service. Then, if his line were wired direct to the telegraph instrument, he would have no direct means of calling the exchange, and would consequently have to call up from some external source and request that the telegraph connection be put up. With the circuit as shown in Fig. 4, however, all that would be required would be to throw the switch to the telephone apparatus, by means of which the regular toll operator could be called; who, in turn, would switch the leased line subscriber to the proper party, who could attend to his needs. Then, when the plug for "Morse" tap service is inserted into jack 1, the toll switchboard apparatus will be cut off by means of the break contacts in this jack, and the telegraph apparatus at the leased line subscriber's premises be placed into the circuit by returning the switch to normal.

Returning to the equipment panel in Fig. 3, to the right of the leased line panel last referred to is the battery panel in which are located battery jacks numbers 19 to 24, of Fig. 1.

The method of handling the telephone connection on simplex, composite and phantom operation has been discussed in the preceding, but very little has been said regarding the operation of the "Morse" and battery panel. By referring to Fig. 1 it will be noted that if a short circuited twin plug is inserted into jacks 19 and 20 it will place negative battery, and one inserted into jacks 20 and 21 will place positive battery, on the springs of jack 14 of the "Morse" panel shown in Figs. 1 and 2. Therefore, if a plug to which is attached the regular telegraph apparatus is inserted into either of jacks Nos. 11, 12 13 or 14 one will have the desired potential of battery directly in series with the equipment attached to that plug and, consequently, the apparatus will be ready for service. These loop jacks are wired in each side of the line of this circuit, as it is very often quite convenient to have two telegraph sets, as well as metering equipment, in series on the line. Jacks 11 and 15 in the "Morse" panel are used for putting up leased line and phantom connections; and they are therefore so wired that by plugging into these jacks the remainder of the "Morse" circuit is cut off, due to the break contacts in these jacks. In case it is desired to put a telegraph repeater into the circuit, it is plugged into jacks 11 or 15 of one circuit and the other repeater tap is plugged into jacks 1 or 15 of a circuit which is the continuation of this line.

The general iron and wood construction of the "Morse" and test board is identical to that used for regular local subscribers' board sections, *i.e.*, the framework of the section, which bears the weight of the apparatus and the mechanical strains, is made of angle iron. This frame is reinforced and covered by a cabinet of proper design to give it a pleasing appearance.

The face of the board on which the various jacks are mounted is built of either solid hard rubber panels or it may be made of sheet brass on either face of which is mounted a sheet of hard rubber. The former construction is used mostly for smaller equipments, while the latter is used for large equipments almost exclusively. The panel construction for large boards is depicted in Fig. 5, from which it will be noted that the body of the panel is made of solid brass, which carries the mechanical strain of the equipment, the rubber sheet being used for insulation purposes only. In addition to the hard rubber which is fastened to each side of the brass strip, each jack hole is equipped with a rubber bushing to insulate the sleeve of the line jacks from the brass strip.

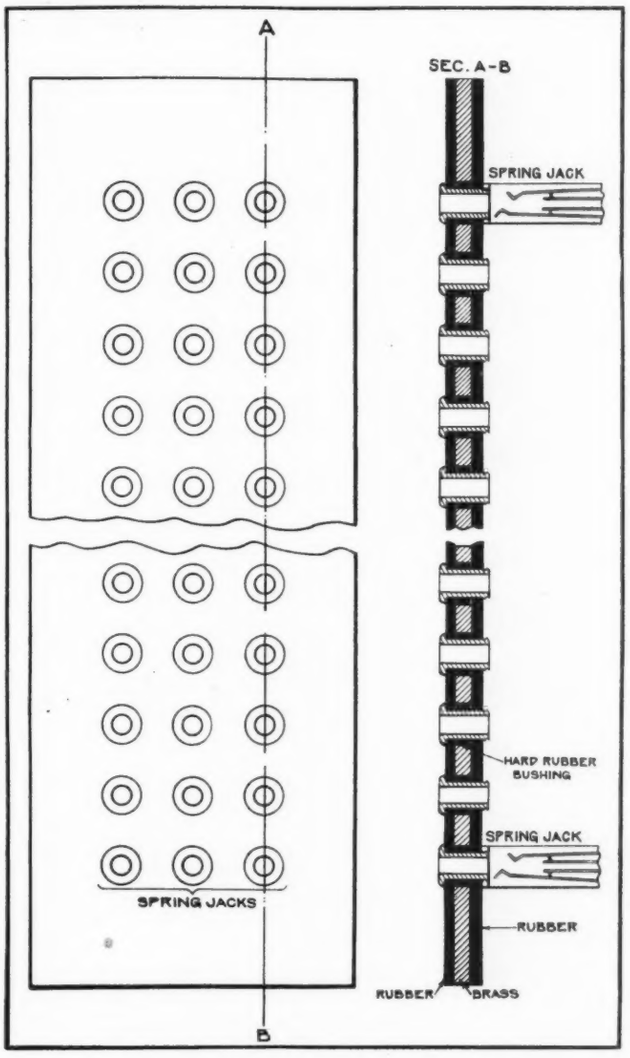


Fig. 5.—Switchboard Panel Construction.

The panel construction shown in Fig. 5 has been found practical, since brass is not affected very materially by the heat, and consequently the jacks mounted on a panel of this type are not thrown out of alignment due to the ordinary temperature variations. This is of vital importance, since a very slight contraction or expansion of the material upon which the jacks are mounted would make the use of twin plugs practically impossible. The brass sheet also acts as a reinforcement for the hard rubber, in that it keeps the rubber panel from either warping or buckling, since the same is rigidly attached to the sheet brass. This type of panel construction has met with great success in practice.

Citizens, of Grand Rapids, Declares Fifty-Second Consecutive Two Per Cent Quarterly Dividend.

Directors of the Citizens Telephone Company, Grand Rapids, Mich., at their quarterly meeting July 9, declared the customary quarterly dividend of 2 per cent, payable July 20. This will be the fifty-second consecutive dividend at this rate and will call for the disbursement of about $70,000.

Nebraska Joins Fight Against Monopoly

Bell Purchases at Plattsmouth and Nebraska City Start Quick Action by Attorney General—Nebraska Fourth State to Start Anti-Monopoly Proceeding Against Telephone Trust—Gets in Line with Missouri, Kansas and Mississippi to Enforce Anti-Trust Laws—Bell Defiance of Law becoming a National Issue.

The anti-trust laws of Nebraska seem to be on the statute books for the purpose of being enforced. When the Attorney General of the State learned this week of the attempt on the part of the Bell telephone company to buy out some of its competitors, he lost no time in calling upon the Supreme Court to prevent such purchases in violation of the laws of the state, and of the nation. The companies which, with the Bell interests, brought on this action on the part of the Attorney General are the Nebraska City Telephone Company, the Plattsmouth Telephone Company and the Home Telephone Company of Papillion, interests in which were sold to the Bell telephone company.

Recent Sales Invalidated and Further Purchases Enjoined.

As a result of the prompt and vigorous action of the Attorney General, the Supreme Court has issued a temporary injunction restraining the Bell company from purchasing these or other Independent companies, and compelling the Bell company to cut off connections already made with companies so purchased recently in violation of the anti-trust laws.

Individuals Will Be Prosecuted.

It is understood that under the anti-trust law of the state of Nebraska, the stock of the Independent companies which was purchased by the Bell company, will be forfeited to the State, and not only will ouster proceedings be brought against the telephone trust, but prosecutions will be brought against individuals who, if convicted, will be subject to a fine of $5,000 or one year's imprisonment.

It is reported that this case will be vigorously prosecuted, as it is proposed to make an example of the telephone trust in the state containing home offices having the management of the group of local companies controlling Bell lines in Nebraska, Iowa and Minnesota.

This action of the Nebraska Attorney General follows similar actions in Missouri, Kansas and Mississippi, in all of which states the state departments of justice are vigorously inquiring into the monopolistic efforts of the Bell telephone companies.

Injunctions preventing purchases which do away with competition have already been issued in Kansas and Mississippi, while in the latter state a heavy fine has been imposed and proceedings involving a claim for damages in violation of the statute amounting to $1,500,000 are now being prosecuted by the attorney general of Mississippi.

The character and purposes of Bell monopolistic efforts are becoming well understood by the public and by the executive and legal officers of the various states, and it may be expected that if the practice of attempting to purchase competitors is continued a general movement against such methods, backed by popular sentiment against these practices of the telephone trust, will sweep the country.

State Arraigns Telephone Trust.

The petition in equity in which the State of Nebraska brings action against the Bell corporation and Independent companies which attempted to sell out to it, and their respective officers, is a powerful arraignment of the methods of the telephone trust. It is directed against the American Telephone & Telegraph Company, Plattsmouth Telephone Company, Nebraska City Telephone Company, Nebraska Telephone Company, Home Telephone Company of Papillion, Casper E. Yost, G. E. McFarland, Thomas E. Parmele, Ralph Duff, I. D. Clark and —— Hall, first and real name unknown.

The bill of complaints recites the form of organization of the American Telephone & Telegraph Company, the corporation controlling numerous subsidiaries among whom the territory of the country is divided. It is set forth that these subsidiary companies are limited as to choice of apparatus and instruments, and their territory is restricted by contracts with the parent company; that during the period of its control of exclusive patent rights, it monopolized the business entirely throughout the United States. Low development and refusal to build for farmers are cited against the company during this period.

The beginning and growth of competition is reported and the statement made that as a result of 15 years of competition, the use of the telephone has grown to enormous proportions.

It is charged by the State that the American Telephone & Telegraph Company has resorted to unfair and illegal competition in its efforts to drive Independent companies out of business; that it has caused its secret agents to purchase Independent plants and then allow the service of such plants to deteriorate, and refused to extend the systems; that cut rates and free service have been given to communities where Independent plants were installed, and that such practices are still being followed by it and its subsidiaries.

It is further charged that the American Telephone & Telegraph Company has illegally purchased control of the Western Union Telegraph Company, thus acquiring the business of a substantial competitor in the telegraphic business, which business is a heavy contributer to the revenue of the American Telephone & Telegraph Company.

It is charged that the purchase of Independent plants throughout parts of the country, whereby competition in some sections is already destroyed, is contrary to the laws of the state and to the laws of the United States; and that the telephone trust is arrogant and law-defying and is pursuing its unlawful course regardless of law and the rights of its competitors.

Comparison of the magnitude of the Independent companies operating about 116,000 telephones, representing a $10,000,000 investment in Nebraska, and the Nebraska Telephone Company, with its 47,000 telephones and investment of $6,000,000, is cited.

It is charged that the Nebraska Telephone Company, a Bell subsidiary, has used legal and illegal means to stifle and drive out competition; has reduced its rates below the cost of service, and given free service; has sought to break up systems made by connections of lines of Independent companies, and that it is still resorting to such practices.

It is recited that notwithstanding these illegal and unfair competitive methods, a large Independent system, made up of about 100 different companies, interconnected by toll lines, is now in existence; and that a large number of these companies have made contracts for the interchange of business on a fair, reasonable and just basis, maintaining a traffic association for handling efficiently the interchange business, and that large sums of money have been saved to the people of the state by the competition of this Independent system with that of the Bell companies.

The complaint then touches upon the injury done to the state by the withdrawal of the Plattsmouth Telephone Com-

pany, the Nebraska City Telephone Company and the Home Telephone Company of Papillion from this Independent competitive system through their purchase by the Bell interests; and that this purchase was a part of a general plan and conspiracy to break up the Independent system by the purchase of a number of different companies forming links in the chain.

The bill prays that an injunction be issued restraining the Bell company from purchasing any further Independent exchanges or systems; from connecting their lines with any of the lines of the defendants named in the petition, or other competitive companies; and that it be made to discontinue operating such connections made within the past 10 days with competing companies, or exercising any control over such companies; that the transfer of stock be declared null and void, and that all interest acquired in these competitive companies be forfeited to the State, and that the charter of the Nebraska Telephone Company be revoked and canceled; and that the American Telephone and Telegraph Company, and the Nebraska Telephone Company, be forever barred from any business in the state of Nebraska, and that receivers be appointed to take charge of the property of the Independent companies named in the bill.

The Supreme Court of Nebraska has substantially granted the relief asked by the State in the following temporary injunction:

IN THE SUPREME COURT OF THE STATE OF NEBRASKA.

State of Nebraska, Plaintiff, vs. American Telephone & Telegraph Company, et al., Defendants.

RESTRAINING ORDER.

This cause came on for hearing on the application of plaintiff for a temporary injunction against the defendants and it appearing necessary that the defendants should have notice of this application before granting an injunction, it is therefore ordered that said cause be set for hearing on the 12th day of September, 1910, at ten o'clock A. M., at the supreme court room, in Lincoln, Nebraska, and that the plaintiff be required forthwith to notify the defendants of the time and place of said hearing, and that until the further order of the court a restraining order is allowed enjoining the defendants, the American Telephone & Telegraph Company and the Nebraska Telephone Company, their officers, agents, servants and employees, and each of them, from purchasing directly or indirectly the whole or any part of, or any interest in, the capital stock or property of or other interest in any Independent telephone company or exchange which is or may be used, or has been used, in competition with any line, exchange or property owned, operated or connected with the lines, exchanges or properties of said Nebraska Telephone Company or American Telephone & Telegraph Company, or either of them: that they be, and are hereby, enjoined from connecting their lines with lines or exchanges or toll boards of said companies, pursuant to said unlawful conspiracy or purchase: that they be directed to forthwith sever any such connection made within the last ten days: that they are enjoined from taking any part in or interfering with or making any change in the connections or business of the defendants the Plattsmouth Telephone Company, the Nebraska City Telephone Company and the Home Telephone Company of Papillion, or either of them, and that the said Plattsmouth Telephone Company, the Nebraska City Telephone Company and the Home Telephone Company of Papillion, or either of them, and their officers, agents, servants and employees, be enjoined from making any connection with the lines of the said Amercian Telephone & Telegraph Company of the Nebraska Telephone Company, or either of them: and that they are further enjoined from transferring any capital stock, or other interest, in said companies to said American Telephone & Telegraph Company or the Nebraska Telephone Company, or to any of their officers, agents, servants or employees.

This order shall become effective on plaintiff executing to the defendants an undertaking in the sum of $5,000 conditioned as required by law.

(Signed). M. B. Reese, Chief Justice.

Eternal Vigilance.

All are familiar with the quotation, "Eternal vigilance is the price of liberty." It would seem that the motto has a peculiar significance for those engaged in telephone work.

In the past it not infrequently happened that subscribers complained of the recurring troubles which were due primarily to the lack of thoroughness on the part of employes. The men were prone to limit their investigations to locating the particular trouble of which complaint was made, and to ignore the possibility of any other troubles which would make themselves manifest within a short time. Cases have been known where the subscribers complained of a broken mouthpiece which was promptly replaced, but the troubleman closed his eyes to the fact that the cord on the hand telephone was ragged and that it would only be a short time before it would have to be replaced.

These days, however, are fortunately past, and when a troubleman now arrives at the station of a subscriber he not only clears the trouble complained of, but makes a complete investigation of all the apparatus and wire connected with the station. By following this practice persistently the number of troubles are far less than formerly when the number of stations was 50 per cent less.

The vigilance of the Milwaukee Cable Department is happily illustrated by the following instance which occurred within the last few days: It is the practice of the trouble operators to make voltmeter tests on all lines, and whenever a suspicious condition develops it is given prompt attention by the cable force. It was recently found while testing the trunk lines between offices in Milwaukee that a pair of vacant conductors showed a small leakage. Realizing the importance of having uninterrupted service the cable department gave this its first attention, which resulted in our finding that the cable sheath had cracked a distance of about one and one-half inches, and that moisture was beginning to penetrate the cable. The trouble was quickly cleared without any interruptions occurring.

This is merely given to illustrate the necessity of being continually on the alert in order that the best service may obtain at all times.—*Wisconsin Telephone News.*

Pointers for Subscribers of the Small Exchanges.

Under the title "Read This and Then Cut it Out, But Don't Tack it on the Telephone Box, as it Might Cause a Short Circuit," the Albion (Ill.) *Journal* published the following:

"If you have a telephone in your office or store, call up central and then go and wait on your customers. Of course, central can afford to wait, as she has nothing else to do.

"Take your time about answering your bell; or what is a great deal better, do not answer it at all, but wait a half hour and then ring up and ask who called you and get mad if central has forgotten who it was.

"Throw keys, combs, etc., on top of your telephone, which will short circuit your instrument; then go to sleep and no one can call you.

"Never speak kindly to the operator, as she is more used to being called names.

"If the party you called does not answer, blame central.

"Never call by number, as you don't have time to look in the directory and central has time to burn.

"Hang up your receiver big end up, as in this way it gets full of dust and out of order, and this will furnish you with an excuse for swearing at the telephone system. When through, drop the receiver or throw it down. This allows the batteries to run out and breaks the strands on the receiver cord. This gives another chance to kick."

Long Distance Operating*

By W. S. Vivian

As some of you are aware, the Michigan Independent Telephone Traffic Association was organized and began active operation June 1st, 1904. It was organized for the purpose of giving an equitable division of the tolls to the carrying companies, which feature alone proved to be absolutely necessary in order that the companies might get what was coming to them and might pay what belonged to others. We had not proceeded very far in this work when the vast amount of discrepancies arising between offices, showed that there was a great deal of incompetency and carelessness on the part of operators in keeping their records correct and reliable. After nearly three years' work in agitating the question in various forms and ways, the Michigan Independent Telephone Managers' Association was organized, and at its various meetings, a very vigorous campaign was prosecuted in the interests of better workmanship and a higher and better class of service.

At several of these meetings operators from many of the offices were in attendance, and took very active parts in the discussion of a subject with which they were so familiar. They showed not only that they were interested, but recognized the fact that a more systematic and uniform manner of handling the business was a necessity.

We began early in the Fall of 1909 to hold what we termed Schools of Instruction for long distance operators, where we would bring a group of operators together from numerous towns in a given section and discuss the detail work of operating as thoroughly as we could with the limited time at our disposal.

We started the work by taking written observations from given circuits, noting everything that was said and done by operators. In criticising these observations, we found that about 75 per cent of the words actually used were not only unnecessary, but unwise, and that by instituting specified phrases and customs, conditions could be greatly improved.

For instance, we found the actual practice something like this: The office at "A" calling the office at "B." The operator would go in on the circuit and ring, without making any test. The "B" office would respond by saying "Hello." The "A" office would say "Hello. Who is this?" The "B" office, "This is B. Who are you?" "Why, this is A." And then they would start and pass their call in any one of many ways. It seemed to the writer that in the first place, the operator at "A" should make a thorough test before ringing out on the circuit, in order that any possible conversation might not be interrupted, or any one holding the circuit might not be cut off. After finding the circuit available and signaling the office at "B." The "B" operator should come in by giving the name of her office. The "A" operator would then give the name of her office, and what was wanted. With that idea in mind, we started our work in these Schools of Instruction, and we have requested, either personally or in writing, that every operator in the state be guided by the forms which have been advocated.

For sake of argument and illustration we will take three towns tributary to South Bend. We will suppose that Mr. Smith at 2348, South Bend, should want to talk to Mr. Martin at 125, Colon. The work in this instance would be handled something like this. Mr. Smith rings "Central," asks for long distance, and is promptly connected with the long distance recording operator, who comes in on the connection, saying, "Long Distance." Mr. Smith says, "I would like to talk to Mr. Martin at Colon." Long Distance says, "Who is this?" Mr. Smith replies, "Mr. Smith at 2348." Long Distance will then ask, "Has Mr. Martin a telephone?" "Yes. His number is 125." She says, "All right, Mr. Smith, I will call you in just a few moments." She tests her circuit to Colon, which is a direct circuit, by going in on the wire and listening. If the circuit is not in use, she will say "South Bend. Are you waitin?" and receiving no response, will give the proper signal. The operator at Colon on receiving this signal, will come in on the circuit and say "Colon." South Bend then says "South Bend, Mr. Smith wants Mr. Martin." If the Colon operator wants no further information, she says "Just a moment," and rings Mr. Martin's number. As soon as Mr. Martin responded the Colon operator says to him, "Mr. Martin?" "Yes." "Someone at South Bend wishes to talk to you," and tells the South Bend operator "W. H." The South Bend operator immediately puts her party on the circuit, Mr. Martin being already on, and says, "Go ahead," and the conversation takes place.

Now, in giving the above illustration, you will bear in mind that there are a good many possible complications to take place. First, Mr. Smith might not have been sure that Mr. Martin at Colon had a telephone. If that had been the condition, the South Bend recording operator should have attempted to find it out at the time she took the call. If Mr. Smith was uncertain, she should have found out what she should do in case Mr. Martin did not have a telephone, by saying, "If Mr. Martin has no telephone, shall we send a messenger?" In other words she should get information thoroughly complete, and in a way that will not be offensive to the subscriber, so that when she is on the toll line the business can be transacted with the greatest possible dispatch.

If this message we have referred to should have been a "Sent Collect" message, sometimes called a "Reversed Message," the South Bend operator in passing her call to the Colon operator, would have used the word "Collect" immediately after giving the name of her station, as follows: "South Bend, Collect. Mr. Smith at 2348 wants Mr. Martin" When the message is given in this way, the Colon operator immediately understands that the ticket she is receiving is a "Received Collect" ticket, one that she is responsible for and one for which her office must collect. The South Bend operator will know whether this is understood or not, as when the Colon operator comes back on the circuit with her "W. H.," she would say "W. H. O. K.," which would mean to the South Bend operator that she has the desired party and that the charges are authorized. An "appointment" call would be handled in a similar way.

There are a great many complications in this work which can be brought out only in taking a great deal of time and by discussion. This illustration has dealt with a message between two points where one office rings the other direct. In the next illustration we will take a message from South Bend to Battle Creek. The circuits over which this message would travel, would be No. 686 from South Bend to Colon, and No. 216 from Colon to Battle Creek.

In this illustration Mr. Smith at South Bend is calling a Mr. Martin at Battle Creek. After receiving the call, the South Bend operator tests her circuit to Colon, as specified in the first instance, and if the circuit is available, gives the signal for Colon. The Colon office answers by saying "Colon;" South Bend then says "South Bend. Ring Battle Creek." The Colon operator immediately tests her circuit to Battle Creek by first listening, and then by saying "Colon. Are you waiting?" and then signaling Battle Creek. At the same time that

*Abstract of a paper presented at the joint convention of the Indiana and Michigan Independent Telephone Associations at South Bend, Ind.

she rings Battle Creek, she says to the South Bend operator "Circuit 216," and as the Battle Creek operator responds by saying "Battle Creek," she says "Colon, South Bend, circuit 686 wants you," connects the two circuits together and says "Go ahead." Battle Creek says "Battle Creek"; this in order that the South Bend operator may know that she is on the circuit; also as a line test. South Bend then says "South Bend. Mr. Smith wants Mr. Martin," and the detail of handling the call would be similar to that of the first instance.

Supposing in this latter instance the circuit from Colon to Battle Creek was busy. Colon would then say to South Bend "N. C." South Bend should then say "Call me?" Colon would say "Yes." We then hold that the Colon office is responsible for the completion of that message, and that she should get those two offices together at the earliest possible moment. In order to see that our switching offices are doing this, we have requested offices generally throughout the state to notify us of any instance where any switching office has not called them back within fifteen minutes after making such a request. Of course, when you bear in mind that the average message is put through within six minutes, you will see that there are not a great many messages that are delayed over fifteen minutes. And on the other hand, to protect the switching operator from being imposed upon, we have requested them to notify us of any message where the originating office has requested them to call, and after they have built the circuit through and called back, find that the originating office has talked some other way.

In our various meetings we have urged that the codes be used; we have urged that the girls themselves should use a great deal of care in the tone of voice which they use in transacting their work; that they should be courteous and accommodating; that they should remember that they are each and every one directly representing the company to the public, and the public's impression and opinion of the company is very largely a result of the treatment which people receive at the hands of the operator.

The success we have had in handling this work has been very gratifying. For instance, the word "Hello" which was used inumerable times a year ago, is beginning to be a thing of the past, and the operator who uses that word today in connection with her long distance work is not considered up to date in her operating.

I have also found, as I have gone into the offices generally, that almost without exception, the offices have a great deal of trouble, first in securing enough operators for the work; and secondly, to secure operators who have the right kind of ability, and I wish to say right here that in my judgment this condition is true only because the companies throughout the country are not giving their operators sufficient compensation for their work. By many, operating has been regarded as a service that anyone could render but experience has proven that only about one out of every six applicants develops into a competent operator. They may have ability and may be successful in other lines of work, but they cannot operate, and this suggests that operating is a business or profession which stands out separate and distinct from everything else.

In the towns of 5000 and under, operators' salaries should run from $20 to $40 per month, striking an average of about $30. In towns of larger population, they should receive a larger compensation, as living expenses are proportionately greater.

Last week the writer was in four towns in the interests of service work, and talked with two others, and they had the same story, "Couldn't get operators." At the offices I visited, girls were at the board working who were doing their very best, only they were not trained operators and it was not possible for them to render an intelligent service to the customers of the company.

This condition, it seems to me is false economy, and in the long run is the most expensive. Of late the thought has impressed itself upon me more and more that in Michigan, we could well afford to have a central training school, located somewhere convenient, where every operator would receive a training in her work before going to her position at the Board. At first thought this may strike you as meaning an enormous expense to the companies but I do not believe it would be. My plan is this: Suppose we take Lansing as being a center of the State. The manager in another city hires a new operator, whom he expects to place on the long distance board, or it may be that she will do combination work, some local and some long distance; before he hires her he will outline the general terms upon which she is to go to work. Among other things the thought would be impressed upon her mind that she should not go to work if her idea is temporary employment. For instance, many of our girls like to find employment during their summer vacations; that is all right, only telephone offices are not the places for them. He would show her that she should not think of coming to work for a telephone company unless she expects to make that work permanent. Then if things were satisfactory, he would send her to this Central Training School at Lansing, would pay her expenses there, and in two weeks, or possibly less, we would be able to turn out an operator who would have a scientific training in operating. She would then return to the exchange where she was to work and adapt her knowledge to the local conditions. You will see what this would mean: Every operator in the State, an expert and handling the work uniformly with every other operator. This of course cannot be realized until our operator's salaries are placed where they belong, so that this work may look attractive and be attractive to these girls.

One of the very helpful features of our work has been to get the girls together, and get them acquainted. Where one operator knows personally other operators in almost every town she does business with, we have found beyond any question of argument, that this has stopped the "scrapping" and arguments between offices to a very noticeable degree.

In this operating feature we of course make no claims to perfection, thoroughly realizing that our work is merely begun, but I believe with the experience we have already had, and the results that have already been obtained, that the companies in Michigan will prosecute this work much more agressively in the future than in the past.

One More to the Credit of "Telephonology."

The new book, "Telephonology," in which H. R. Van Deventer has so well hit the mark in his efforts to set forth technical information which will help the average practical man in his every day work, seems to have been likewise an inspiration to a North Carolina newspaper man. At any rate, the review which appeared in the Charlotte N. C., Observer is about the only article descriptive of anything related to the telephone business which was ever written correctly by a newspaper man without telephone experience.

This is highly creditable to the newspaper man, but perhaps more so to the author of the book, because it shows how clear his treatment has made difficult subjects appear.

The telephone man in the small exchange finds that this book will lift him out of many a difficulty, as he has in it accurate data on such matters as making slide wire bridges and other testing instruments, cable test sets, testing manufactured equipment, setting up phantom circuits, and many other matters which are likely to come up at any time, and catch a man just a little bit shy of the knowledge necessary for doing a job quickly in just the right way. The seven hundred illustrations help wonderfully in making the book interesting and useful.

Letters from Observing Workers

Blind Woman Successful as Telephone Operator in Oklahoma.

Telephone operating is a vocation which is successfully practiced in various parts of the country by a number of those unfortunate people who are prevented by blindness from having a wide choice of work.

Mr. W. A. Ambler, general manager of the Vinson Telephone Co., Vinson, Oklahoma, has employed a blind operator, and his endorsement of her success should be an inspiration to other managers in small towns to extend an opportunity to work to persons who may be suffering from this affliction, but otherwise in full enjoyment of their faculties, and in need of a chance to earn a salary.

Mr. Ambler says, in a letter to TELEPHONY:

"Mrs. W. E. Little, of Reed, Okla., began working for us about a year ago. We placed raised letters on the drops so she could read them by touching them with her fingers. The numbers and names were read to her while she wrote them in the system of writing that all blind people use. She never has to refer to her directory now, as she knows all the numbers and names.

"The switchboard she operates is a common magneto drop board. There are several long distance lines, and 85 telephones.

"She operates with as much activity and promptness as any operator who has good eyes. She can tell, most of the time, which line is calling by the sound of the drop shutter.

"She keeps her own books, and at the last of each month she reads all the month's work to some one who can see, so the reports can be made out. She keeps account of the messages of each of the 85 subscribers and charges them separately, and can "settle up" with any one by her own books.

"It is very seldom that one can find a mistake in her work.

"Her husband is almost as blind as she is. He operates the same board in the same way.

"Every one is very much pleased with them as operators."

A Splice that Cost Twenty-eight Dollars.

The splice shown in the illustration cost a farmers' telephone company some twenty-eight dollars to find and remove. Since finding this splice the company has sent a lineman over the

It Cost a Farmers' Telephone Company $28 to Locate and Repair This High Resistance Joint.

line to solder every splice and connection, and says that this will always be its policy in the future. There is no question about its paying to do work right in the first place. But it costs money to learn this.

Forest City, Iowa. C. R. Hill.

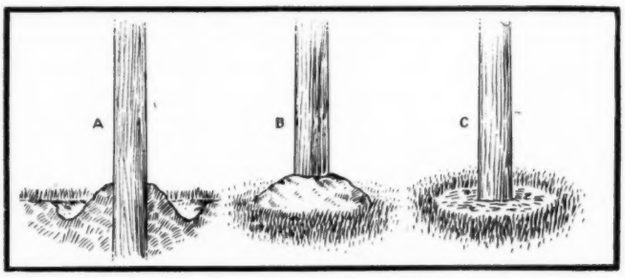
Damage From Wild Fires.

During exceedingly dry weather damage to pole lines often results from desultory fires of uncertain origin. There are stretches of line through low ground where the grass is worthless for hay, following railroad right-of-way, and through uncleared land where the timber is not considered of any particular value, where fires occur with almost regular frequency.

The growth of vegetation at the foot of each pole goes on undisturbed for years, and a bed of combustible matter forms. When this is ignited the pole often suffers damage. Upon examination it will be found that many poles are left considerably weakened, and others are burned off entirely. Not infrequently the flames will follow a weather-check or a dry hollow heart and break out well up from the ground line.

On stretches of line where fires are probable some means of protection should be adopted.

To trench around the pole and use the dirt removed for banking purposes is effective against fire, but forms a sink-



Three Methods of Protecting Poles Against Running Fires.

hole for water during a rainy season, softening the earth around the pole and making the line unstable.

Fresh banking brought from a short distance is another means of protection against fire, but this will be found to be quite expensive.

Another method quite as effective and far less expensive is "grassing"; that is clearing a space of from twelve to eighteen inches around each pole with a sharp bladed shovel. The cost will be dependent upon the number of poles in succession requiring attention, averaging from four to ten cents per pole.

Fungus Reported to Have Eaten Telephone Wires.

An as yet unconfirmed report from Austin, Texas, says: "The scientists of the state department of agriculture are greatly puzzled over a remarkable and unclassified fungus growth which made its appearance in South Texas a few months ago. It first attacked the live oak trees, quickly killing them wherever it appeared. It then spread to other trees and has devastated a big scope of territory. The most wonderful thing about the unknown fungus is that it recently made its appearance upon telegraph and telephone wires and in the section around Cuero it has ruined many of the wires. The peculiar parasitic growth seems to exude an acid that eats into the wires, destroying their usefulness. Efforts to eradicate the fungus growth by ordinary methods have proved futile. It continues to gradually spread into virgin territory, destroying the timber and ruining the telephone and telegraph wires in its uninterrupted march. It is the opinion of the state department of agriculture representatives who have investigated the new pest that it entered Texas from Mexico, although nothing is known of such a fungus growth having done damage in that country. Steps are to be taken immediately to more thoroughly investigate the mysterious agent of destruction with the view of eradicating it or arresting its progress."

Austin, Texas. W. D. Hornaday.

A Year's Experience in Trouble Shooting With an Automobile.

The automobile is now being discussed among many telephone managers in reference to telephone work. Thinking that I may aid some who are on the fence in reference to the conveyance for their trouble shooters I am going to give my one year's experience with a Benzine Buzz Wagon.

I bought a second-hand ten horsepower Reo runabout with top, storm-front and curtains, of the West Side Motor Co., of Hamilton, O. When I purchased this little "Sneezer," as they are commonly called, I hadn't much intention of using it as a trouble wagon, but when a trip to the country was on deck, it was always first thought to go in the "Gasolene Boat," and a good old boat she is. The disease steadily grew worse until the livery men starved to death as far as the telephone company's hiring was concerned, and then we had to depend on the Reo.

Since then we have used it continuously for trouble and light repair work, except in deep mud during the spring.

Suppose you have a couple of double arms broken five or six miles out. Load on a couple of double arms, some wire, blocks, and other such supplies, and two men can go and do the work in one-half the time of the old fashioned way with almost no transportation expenses.

When you lay out $250 for a motorcycle, your man cannot carry anything except a test set and a pair of spurs and a scrap of wire. For that amount, or possibly $50 more, you can invest in a good second-hand runabout automobile, which will cost only a little more to operate, and give you twice the capacity for hauling. Then also, with a runabout a troubleman can travel in bad weather when the motorcycle cannot be used. Then again, one man with a telephone to install nine or ten miles out in the country, and quite a little trouble on the way, with a grave-yard livery horse would put in the entire day. Start him out in a runabout, he may get a tire punctured, install the telephone, make the repairs causing the small troubles along the line, and be in by noon. Wouldn't that be a money-saver? Time is $$$$$$$.

I know of many trips which I would have laid aside for a complete day's trip with a horse and buggy, but which have been easily made in a few hours with a little gasolene. The work is out there to do; the less time spent in going, and returning, the more time there is left to be spent on the work. Many times the troubleman goes out with a livery rig and I wonder why he isn't back, or else why the trouble isn't cleared. It would seem to me that he ought to have been in long ago; but, think a moment!—He has a livery horse!

Now, about the cost of operation:

The whole tire expense	$32.40
One new chain	6.40
One new sprocket wheel	3.20
Gasolene, as near as can be estimated	22.50
Total	$64.50

Average miles per month, not less than 250 miles, on a plant of 550 telephones.

Some few smaller expenses might have been attached but these above mentioned are the most important. I am quite positive $75 would more than cover the entire expense for the whole year. Some of this expense, as one can see, was for worn parts which were put on when the machine was first purchased.

There may be possibly one time in the whole year when an automobile wouldn't be practical, and that is during the soft roads and snow of early spring. There are times when a trip through some muddy roads just to replace a pair of dry cells is not pleasant, but even if a little more time is spared to get through some tough yellow clay places, as a usual thing time is gained.

It is often thought that a troubleman would have to take a week off to learn to operate the automobile. I usually find that a good practical trouble shooter or lineman, in a couple of trips, with the assistance of a man with some automobile experience, will be able to operate the machine himself. Very often the trouble with the average automobile is in the electrical apparatus, and the practical man readily understands that part.

In conclusion, I would recommend a good single cylinder automobile for light work in preference to a horse drawn vehicle for your trouble shooter, installer, and general light repair man. My experience in this matter so far I consider a success, and knowing there are many other companies finding the experiment a success, I would be glad to see more published on this subject.

Hoping this small contribution may lead some other to write an article from actual experience, from which there will be more benefit derived.

Fred S. Bishop, Mgr.,
Bradford, Ohio. Bradford Telephone Co.

A Michigan Soap Story.

The shrewdest and most enterprising contract man will sometimes make mistakes and occasionally be brought to grief. His chief aim is to get the eye of the public and place the merits of his wares before it. Anything to attract attention. Perhaps he uses an ad. framed in phonetic spelling; some startling head-line; or catchy phrase or cartoon, and occasionally he resorts to methods that might almost be classed as sensational.

Over in Michigan, several months ago, a certain telephone contract agent was hustling to get new business, and had pulled off several very successful stunts.

One day an agent representing a novelty concern dropped in on Mr. Contract Man.

The house which the caller represented had taken note of the particularly effective advertising work which Mr. Contract Man was putting over, and the purpose of his call was to assist in the campaign with what they considered to be a great scheme—a souvenir cake of toilet soap, with an advertisement on one side of the cake placed under a sheet of celluloid; the soap would wear as used, the novelty man explained, on one side only, the other side being insulated, to use a telephone expression, by

Handing Out Soap Does Not Make a Telephone System Popular.

the celluloid, in consequence of which the "ad." would show until the soap was used up.

Mr. Contract Man was delighted. Would not the soap be typical of a general clean-up? And would it not occur to the user when seeing the "ad." to clean up on the telephone he had, and order a nice new telephone, spick and span, from the other company, who were the exponents of clean business management? "Capital!"

Contract Man decided to place the soap in the public bath house, in the hotel toilet rooms, and at different clubs. Possibly if he had stopped at all this, all would have been well, but, another thought—the solicitor could carry several cakes of soap in his pocket, and instead of handing out a card, which would be of no value to the prospective

subscriber, he could pass him a cake of soap with the "ad." uppermost.

A few days afterward a dapper young solicitor made his first call in a residence section. The lady of the house answered the door bell, and the solicitor, with an expression of benevolence, handed the lady a bar of soap.

Astonishment on the lady's features quickly gave place to a look of undisguised anger.

"Well, of all the impertinent—" she started, and stopped suddenly to reach for an umbrella which was standing inside the door.

"I'll teach you to insult a lady—" and before the dazed solicitor could form a line of defense, Bingo—his hat was wedged down over his ears.

Meanwhile the lady's husband had appeared on the scene. In a few words he was advised of the tragedy.

"Offered you a bar of soap, did he? Why, confound his impudence, I'll make him eat it."

The solicitor never waited waited to explain. The husband was a large man and that proved to be the very thing that saved the solicitor. The husband was not a sprinter and the solicitor was a ten second man.

The husband realized before the race was fairly on that his prey would escape him, and with a desperate lunge he sent the bar of soap flying through the air.

The aim was good. The soap hit the speeding solicitor in the nape of the neck, but he kept to his feet and did not stop running until he pulled up at the telephone office.

Between gasps he told the story of his narrow escape. He carefully removed the dents out of his hat, rubbed his neck, and positively asserted that a dozen infuriated citizens had tried to lynch him.

The upshot of the whole affair was that all of the soap was called in and turned over to the janitor of the building. The telephone company has not purchased any soap since, and the chances are that it will not order any soon.

MORAL: Cleanliness is next to Godliness, but be careful about suggesting this to the other fellow. He may resent it.

Telegrams By Telephone In Chicago.

A recent issue of the *Journal of the Telegraph,* published by the Western Union Telegraph Company, contained the following in regard to the use of the telephone by the company in its Chicago office:

The delivery of telegrams by telephone has been developed to a high point of efficiency in the Western Union main office in Chicago since the present system was installed March 8, 1910.

The telephone department was established in a gallery at one end of the main operating room and cut off from noise of telegraph instruments by a sound proof partition, but provided with ample light and ventilation. This location was chosen with a view to saving time in both incoming and outgoing business.

After consultation with the Chicago Telephone Company, there was installed a private branch exchange with a two-position switchboard containing thirty incoming trunk lines. General business is conducted in the ordinary manner. All telephones in the office of General Superintendent, District Superintendent and City Manager are connected with this switchboard, likewise those of branch offices in the downtown business district within a radius of half a mile of the main office. These important branches, therefore, are in as close communication with headquarters as if under the same roof.

Telephone Room of the Western Union Telegraph Co., Chicago.

For handling telegrams, however, special arrangements were made. In the telephone room were placed two recording tables, each with positions for ten operators who sit five on a side facing each other. In front of each operator is a miniature lamp signal system, multipled throughout so that any incoming call flashes a white light to all operators, while a red lamp shows that any particular outgoing line is in use.

All incoming calls pass through the switchboard. If the call is for general office business, the switchboard operator connects with the desired office. If the call is to send a telegram, the operator connects with the recording tables. Instantly a white signal is flashed at each of the twenty positions and the first free operator plugs in. This extinguishes the

other lights, so that all operators know the call is answered and the message being taken.

To obviate congestion of the switchboard, there are fifteen outgoing lines running directly from the record-tables to the telephone company's exchange, for use in the delivery of telegrams by telephone. This gives a total telephone capacity to the Chicago office of receiving twenty messages and delivering fifteen at the same time. The installation was made this large so that no customer should suffer delay by report that "Western Union is busy." While the number of messages delivered by telephone is greatly in excess of those received in similar manner, the incoming equipment must be large because an average of three messages can be delivered by telephone in the time consumed receiving one.

The department is managed by a trained woman supervisor who employes the operating clerks, carefully examining them as to their hearing, enunciation, handwriting, education and manners. Switchboard operators are allowed to do nothing more than set up connections. All inquiries as to rates, messages, etc., are given to a special information clerk. The operators at the recording table receive and deliver telegrams only. There are now eighteen employes in the department.

Endeavor is made to concentrate the receipt and delivery of telegrams by telephone in the Western Union main office. The public is being educated to telephone its messages there instead of to nearest branch offices, when there is no toll charge involved. Thus greater efficiency is secured and time saved in transmission.

The delivery of telegrams by telephone is on a time saving basis. All messages addressed to Chicago received in the main operating room go directly from the wire to the distributing table in the city lines department, from which place they are routed to a branch office wire, dropped to messenger delivery department or a telephone number is written on and they are immediately sent by automatic carrier to the telephone room. The search for telephone numbers is made at the distributing table, so that telephone operators are not delayed.

Systematic rules govern the operations in telephonic receipt and delivery, covering many possible conditions arising with the person at the other end of the wire. Records are kept of addresses, time and other statistical information.

During the month of May, 1910, the Chicago main office delivered by telephone 30,294 messages. Of this number 35 per cent were sent later by messenger on request. The remainder were filed. No attempt is made to use the telephone for deliveries in the business district of the city, but for other sections the service has effected great saving in time and afforded satisfaction.

Another Telephone Convenience.

In Hortonville, Wisconsin, the telephone operator is sometimes called upon to serve as night clerk for the hotel in addition to her regular duties. The hotel has no clerk on duty throughout the night, the doors being left open and regular patrons of the hotel who come in late go in and find a room for themselves. Not long ago, according to a report published in the Wisconsin Telephone News, a representative of the Wisconsin Railroad Commission had occasion to go to Hortonville. He got there late at night and on going to the hotel found no clerk. Thinking the clerk had stepped out he sat down to await his return. After waiting for some time it occurred to him to call up the telephone operator and inquire as to the habits of the hotel. On making inquiry the operator replied, "Oh, they have no night clerk at the hotel, but if you will go up and take No. 7 it will be all right, I think." The traveller followed the suggestion and everything turned out all right.

Emergency Treatment Instructions By Telephone.

A newspaper dispatch from Lawrence, Kas., says: "The country telephone was the means of saving the life of the two-year-old child of W. B. Whittaker, a farmer living near here, last Saturday. The child drank gasolene and was in convulsions when discovered by its mother. While one physician was racing over the country roads in a motor car to the home, another at the telephone was suggesting emergency treatment to the mother. When the first physician arrived the child was out of immediate danger."

Reports of this sort circulated in rural communities are convincing nearly all residents that telephone service is indispensable.

Since Owned by the Bell.

In Wichita, the Independent telephone company's service is such that the cartoonist on the Beacon has a set of moving pictures illustrating how one man waits for an answer from central. The film cover three hours.—*Coffeyville (Kansas) Journal, July* 1, 1910.

British Telephone News

A Telephone Story of the Late King—More About the new Telephone Stethoscope—The Telephone and Human Liabilities to Err—Telephonists' Grievances and an Official Reply—Laying the new Telephone Cable—A Description of the Vessel thal Laid it. Stories told by the Cable Engineer.

By Abercrombie

Stories abound on every side having the late King as their center. There is even a little telephone story which has gone the rounds and which might be repeated. The proprietor of a shop in Bond Street, one of London's most fashionable thoroughfares, has told me that he was the first person outside the limits of what is called the City of London—that is the crowded square mile of which the Bank of England and the Mansion House are the center—to use the telephone. He had seven connected with his various workshops, and one of the first persons to speak through the Bond Street transmitter was Queen Alexandra, who was then Princess of Wales. She held a conversation with the foreman of a city workshop, who was ignorant of his unexpected honor. The late King came next day and did the same, and he was followed by the present King and his sisters, who were then children. It is a recollection which my friend treasures very much.

The new electrical stethoscope, through which the heart-sounds are heard with such intensity that they can be transmitted for more than a hundred miles over an ordinary telephone, was exhibited and described by its inventor, Mr. S. G. Brown, before a crowded meeting of well-known physicians and scientists at the Institution of Electrical Engineers on May 5th.

The apparatus consists of a transmitter made up of two metallic contact pieces of osmium-iridium alloy, opened to an infinitesimal degree by a fine adjusting screw and connected with a local current passing through a coil wound round a permanent magnet. The minute conduction space, which is

maintained by the automatic action of the current from a coil flowing round the magnet, is able to transform microscopic mechanical movements into large current changes.

The apparatus by itself, Mr. Brown explained, reproduces the sound of the heart-beats three times as loud as the ordinary stethoscope. By attaching to the wires of the transformer his telephone relay (a new invention for magnifying the very feeblest telephone currents, which Mr. Brown had previously described to the society), sounds are heard through the electric stethoscope sixty times as loud as through the ordinary instrument.

The results obtained when the new stethoscope and relay were recently tested on a number of heart cases at the London Hospital were described by the lecturer. "When the instrument was applied directly to the heart the sound of the beats given out in the telephones was uncomfortably loud and easily heard by the patient and by all those who stood around."

A point noted by the inventor was the possibility of "tuning" the instrument by the adjustment of screws, etc., so that when the physician was studying the heart sounds, for example, all the shriller breath sounds could be cut out, and, vice versa, if lung symptoms were the objective, the heart sounds could be rendered quite inaudible.

Dr. C. B. Voisey, speaking from personal experience of the electrical stethoscope at work, called attention to the new fields for stethoscopic observation that Mr. Brown's invention would open up for the physician. In the diagnosis of gall stones, stones in the kidney, hardening of the arteries, and early, deep-seated aneurisms, the magnifying stethoscope should prove a valuable adjunct. The possibility that through its use new sounds, indistinguishable with the old fashioned instruments, may be discovered in heart cases should lead to a ready demand for instruments.

When discussing these new uses of telephony it has to be remembered that there is at times, owing to human liability to err, another side of the question. For example, a doctor at a London inquest has just stated that in his telephone message to a hospital, referring to a patient as sent in for peritonitis, that word was interpreted as appendicitis, the wrong operation being thereby performed. According to the statement made on behalf of the hospital no harm was done, as the patient certainly had the second ailment, if not the first also, but the possibility of serious error remains.

In May serious complaints were made at a meeting of London telephonists as to the conditions of work for the girl operators in the Post Office exchanges in the city. It was alleged that at the "city" exchange 30 girls out of a staff of 36 recently collapsed in two consecutive days; that hysterics were of daily occurrence; and that on one day 40 girls out of 240 who were in the "central" exchange were on the sick list. Objections were also urged to the "inhumane methods of supervision" alleged to be necessary to extract the maximum amount of work demanded by the authorities from each of the operators.

It was learned upon inquiry at the General Post Office that there were approximately 1,000 girls in the three telephone exchanges in Carter-lane, St. Paul's Churchyard. They worked 48 hours a week and were employed only between 8 a. m. and 8 p. m., men doing the work at night. The principal exchanges, those at Carter-lane, had been especially designed to secure the comfort and good health of the staff, ventilation, lighting, and heating having been carefully studied. The girls began work as learners at 16, after passing a severe medical examination. The utmost care was taken to secure only girls of good physique.

A comparison of the returns of sickness among the various classes of women workers employed in the Post Office showed that the rate of sickness among the telephonists was not higher than among the other sections. The department had never had a case in which 30 out of 36 girls had collapsed in two consecutive days; such an event would have disorganized the service. Upon the least symptom of indisposition the supervising staff—operators—at once requested a girl to go into the rest room, and if necessary the lady medical officer, who was in attendance daily and gave free medical advice, would render assistance. Elaborate precautions were taken to ensure that as far as possible no girl had an abnormal amount of work to do. The supervision was meant to assist rather than annoy the operators, and was primarily intended to secure the due distribution of work.

Great interest has been aroused at the laying, from a point midway between Dover and Folkstone to Cape Grisnez, the new form of telephone cable, the invention of W. D. Dieselhorst, the works manager of Messrs. Siemens Brothers.

It embodies principles never previously applied to submarine cables, and will enable conversations to be carried on between Paris and the Midlands, and even as far north as Glasgow, instead of such direct communication being limited, as at present, to London and the French capital. Electrical engineers regard the work as epoch-making in the history of submarine telephoning. The cable laying vessel merits some description.

A goodly sized ship of 4,917 tons and 300 feet long, the Faraday, is a combination of a workshop and a telegraph office. With a gleaming white hull, she has two funnels erected abreast near the stern instead of fore-and-aft, as in vessels of an ordinary type. This, it was explained, is to allow the cables when being laid a free "run" along the complicated mechanism which crowds the upper deck. From her bows, stern and sides project platforms supporting masses of cable-laying and raising appliances. She might at first glance be mistaken for a cruiser of a pattern as yet unknown to the Admiralty.

From the stern floats the blue ensign in token of the fact that Captain Gange and some of his crew of 180 belong to the Royal Naval Reserve.

"The Faraday, which was specially designed by the late Sir William Siemens, and is one of his masterpieces, has a record of which we are all proud," remarked Mr. Stopher, the cable-engineer, who in the course of twenty years has superintended the laying of new submarine cables in almost every part of the world. He told how the Faraday has laid no less than 32,000 nautical miles of cable, 24,000 miles of which repose on the bed of the Atlantic.

Between the United Kingdom and the United States she has stretched eight cables. On one occasion she "paid out" between Ireland and New York no fewer than 6,098 nautical miles of cable, which was manufactured and in place within one year of the order being given. This represents something like 12,373,000 yards of cable, weighing over 13,000 tons.

"One of the most interesting cable-laying expeditions we have been on," pursued Mr. Stopher, "was up the River Amazon from Pera to Manos. We navigated the great river for a thousand miles, and the natives living on the banks were astonished to see such a large ship so far inland. They did not trouble us, however; perhaps they were afraid."

This conversation took place before the Faraday sailed. Coiled in wide-sweeping circles at the foot of what is called a "tank"—a steel-encased chamber in the hold—were the twenty-four miles of the newly invented telephone cable which will permit of practically the whole of Great Britain entering into direct conversation with France. It weighed 275 tons. From the center rose a huge steel cone, 30 feet high, resembling nothing so much as a miniature lighthouse. Round this powerful engines wind the cable.

Then it would traverse the hinder part of the ship, through a slightly inclined "trough," pass over a variety of mammoth flanged wheels, the last of which protrudes from the stern over the water, and as the ship moves steadily along at about five knots the cable would slip outwards and sink gently to the bottom of the sea, thirty fathoms below. That, briefly, is how the new cable was laid.

The Legal Side

By A. H. McMillan

Injury Caused by the Ground Being Charged with Electricity.

Where a telephone company was advised that the ground near one of its telephone poles was charged with electricity, so as to indicate a defect, it was bound within a reasonable time to remedy the defect or warn its servant of the danger before sending him to work, and failure to do so was negligence. Such was the holding of the Kentucky court of appeals in an action brought by a lineman and cable inspector of the company, for damages received from a fall off a pole to the ground. The grounds of negligence charged were that certain guy wires with which the injured man came in contact were heavily charged with electricity, to the knowledge of the telephone company, and that the company was negligent in failing to use current breakers (strain insulators) on the guy wires. The plaintiff offered evidence to show that the company had been notified that the ground near the guy wires showed indications of being charged with electricity. The court held that the question of whether it was negligence for the company to fail to use current breakers was for the jury. A verdict for $11,500 was held not excessive. Citizens Tel. Co. of Ky. vs. Wakefield, 126 S. W., 127.

Liability Between Electric and Telephone Companies.

In an action against an electric light company for the death of a telephone lineman by contact with an uninsulated telephone wire charged with a deadly current of electricity from a sagging wire of the electric light company. the court charged the jury to find a verdict for the plaintiff if the electric company was negligent in permitting its wire to sag and come into contact with the telephone wire, regardless of whether the telephone company was negligent in using an uninsulated wire. The electric company asked the court to charge the jury that if it built its line at the place of contact of the wires, using a properly insulated wire before the telephone wire was put in, and it was negligent for the telephone company to use an uninsulated wire, and such negligence caused the accident, the electric company would not be liable. This charge was refused and the one first noticed given. Upon appeal to the court of civil appeals of Texas, the higher court held that the action of the lower court was erroneous. The telephone wire in question was strung subsequent to the erecting of the electric wire and underneath the latter. The electric company claimed that its line was insulated but that the wire of the telephone company was not, thus attempting to place the liability for the accident upon the telephone company. Cleburne Electric & Gas Co. vs. McCoy, 128 S. W., 457.

More Questions About Rural Collections.

In your issue of June 18th, page 779, there is an article headed "Collections from rural lines." I believe this query is from a New York man, but as we are a like company and doing business with rural lines on the same terms, I would like to know what the law is in this state (Missouri).

We are incorporated to do business in the city and own nothing outside the city limits. The rural companies (not incorporated) own and maintain their own lines. We switch them for twenty-five cents per month, payable quarterly in advance according to the terms of a printed contract, a copy of which we enclose herewith.

With one or two of these rural companies we made concessions they asked, which you will find attached thereto. These companies have had some members who have not been paying switching, claiming they did not have any use for central and did not want to switch.

We have decided we do not want to switch these companies longer unless they pay us for every telephone they have on the line and connected with our board. But they claim they have no way to make these people pay or to compel them to get off the line.

What we would like to know is this. Can these rural lines compel their members to pay or have they any right to connect a telephone with our board without paying switching if we object? Also can we collect the switching by law under the terms of this contract as printed; and would the added clause release their company from liability for the amount? You will note that this clause releases the officers only.

We tried to make this contract as liberal and fair for these country people as possible, and would like to have your opinion with any suggestions for improvement you may have to offer. We tried to make it as short and plain as possible, so there would be no room for quibbling.

We claim, under this exception clause, we have a right to refuse to ring these delinquent or non-paying members, but some of their members think not, and that we can only refuse to switch them when they call in.

What is your opinion? We are thinking of canceling these contracts and requiring new ones as per the printed form. Do you not consider this a fair contract?

The question of whether the rural lines referred to can compel their members to pay, is one that depends entirely upon the laws and regulations of each individual rural company. The rural company has no right to connect a telephone with your board without paying switching. The contract which you annex contains the following provision; the rural company being the second party.

"The first party agrees to do the switching between the second party and all other mutual lines or companies giving free exchange and having connections at any time with the switchboard of the first party, in consideratoin of twenty-five cents (25c) per month for each telephone in service on lines of the second party."

It also bears the following:

"It is hereby further agreed that the first party absolves the officers of the second party from all liability for the payment of the dues of any members of the second party, provided the secretary notify the first party of their delinquency within ten days after the first of the quarter, and in this event the first party is privileged to refuse said delinquent members all switching privileges until the full quarter's dues have been paid."

By the contract from which we quote, the rural line agrees to pay you 25 cents per month for each telephone in service on its line. The second clause above quoted exempts the officers from liability, but not the company. You therefore can collect the switching fee by law under the terms of your contract. You would also, under the second clause above quoted, have the right to refuse to ring their delinquent members. It is as much of a switching privilege to be called as it is to call. We therefore think your company would have the right to refuse to ring these delinquent members. In case you did so, however, you would not also have the right to collect from the rural company 25 cents for the telephone that you refused to connect.

We consider the contract you enclose a very fair one.

Collecting Assessments of Mutual Company.

The Lawrence County Mutual Telephone Company of Missouri brought suit against T. D. Hope for assessments amounting to $10. The defense made was that the constitution and by-laws of the plaintiff company provided that any member refusing to pay an assessment for a certain time after notification, forfeited his rights in the company's line, and that the defendant had so defaulted and forfeited his interest in the telephone company and was thereby released from the assessments. The telephone company recovered the amount sued for in justice court, in the Circuit Court for Lawrence county, and finally in the Springfield Court of Appeals. Lawrence Co. Mutual Tel. Co. vs. Hope, 123 S. W., 501.

Sale of Manhole Casings.

The Co-operative Foundry Company of Detroit, Mich., wrote to the Home Telephone Company at the same place, stating that it would furnish 375 manhole casings at a stated price, and the telephone company replied, acknowledging receipt of letters and stated: "We accept your proposition in which you agree to furnish our requirements up to the amount of 500 of these manhole frames and covers." The letter closed: "Trusting you will confirm this by letter at an early date," etc. The foundry company replied: "We have entered your order for 500 manhole frames and covers * * * Thanking you for the order which will receive our prompt and careful attention," etc. Manhole frames and covers to the number of 288 were delivered to the telephone company, but the telephone company did not order the delivery of any others and was sued by the foundry company for breach of contract. The telephone company contended that the letters did not amount to a contract; that all the castings delivered were paid for and that, in any event, plaintiffs had defaulted by the unreasonable delay in delivering and could recover no profits. After a recovery in the Wayne Circuit Court, the telephone company appealed to the Supreme Court of Michigan, which held that a contract had been made by the letters written between the parties. It also held admissible a letter from the telephone company at the close of business the previous season, expressing entire satisfaction as to their dealings. This was in connection with testimony showing that the foundry company had made its deliveries in the same manner as during the preceding season.

Answers from Experience

An Easy Resistance Problem.

A direct current dynamo has an internal resistance of 2 ohms and the voltage across its terminals on open circuit is 220 volts. When the switch is closed (Fig. 1) 4 amperes flows through coil *C* and 1.5 amperes through coil *A*, whose resistance is 50 ohms. What is the total resistance of the circuit? How much current flows through *B* coil? What is the resistance of coils *A* and *B*? What is the joint resistance of coils *A* and *B*? Also the resistance of coil *C*.

As this is a combination series and multiple circuit, all the current passes through the coil *C* and then splits, part flowing through coil *A* and the balance through coil *B*, after which it unites.

The impressed voltage is 220 volts and the current is 4 ampere's, hence from Ohm's law, the total resistance, *R*, of the circuit would be

$$R = \frac{E}{I} = \frac{220}{4} = 55 \text{ ohms.}$$

Considering the multiple part of the circuit, the total current is equal to the sum of the currents flowing in the branches. That is $I = i_a + i_b$. Substituting the value $I = 4$ amperes, the total current, and $i_a = 1.5$ amperes, the current in branch *A* and solving for i_b we have

$i_b = I - i_a$

$= 4 - 1.5 = 2.5$ amperes. the current in branch *B*.

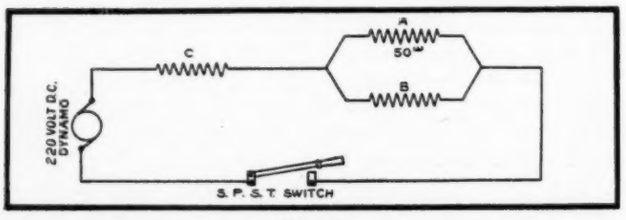


Fig. 1.

In the branches of the divided circuit the currents are inversely proportional to the resistances.

Then $\frac{R_B}{R_A} \quad \frac{1.5}{2.5}$

Or $2.5\,R_B = 1.5R_A$

Hence $R_B = 30$ ohms, the resistance of branch *B*.

Bearing in mind that the total conductivity of a divided circuit is the sum of the separate conductivities, and that the mathematical expression of conductivity is the reciprocal (1 divided by) of the resistance, it is easy to find the joint resistance of *AB*.

$$\frac{1}{R} = \frac{1}{R_A} + \frac{1}{R_B}$$

Clearing of fractions

$$R = \frac{R_A R_B}{R_B + R_A}$$

This is a general formula, used regularly in solving such problems. It is easy to remember that the joint resistance is equal to the product of the separate resistances divided by their sum.

Substituting known values of R_A **and** R_B in the above equation,

$$R = \frac{1500}{80} = 18.75 \text{ ohms, joint resistance of } A \text{ and } B.$$

To find the resistance of *C* it is advisable to use the principle that the fall of potential through each part of the circuit is proportionate to its resistance, being equivalent to the product of current and resistance.

220 volts is the total drop.

The drop through *AB* is $4 \times 18.75 = 75$ volts.

Hence, the drop through *C* is $220 - 75 = 145$ volts.

Therefore, $R_c : R = 145 : 220$.

Substituting the value of *R* and solving the proportion

$$R_c = \frac{145 \times 55}{220} = 36.25 \text{ ohms, the resistance of coil } C.$$

Problems similar to this can readily be solved by reference to standard text books on electricity, and are a little out of place in these columns.

Phantoming Rural Lines.

We have two metallic subscribers lines which are constructed on the same poles, for a distance of about 8 miles, in which a telephone is on one line. At the end of the 8-mile stretch they branch or separate and have telephones bridged on. Could we install phantom coils at the point where the lines separate and at the switchboard, and connect another subscribers' metallic line, thus giving us 3 circuits on the 4 wires? Would we have to take the telephone off of one line; and could we install that on the phantom circuit with coils? We are using No. 12 B. B. iron wire.

The plan which you propose is possible and may even save you money. If you have the cross-arm space for an additional pair of wires it will probably cost about $125 to $150 for a new physical metallic circuit. To get this additional circuit by phantom means will cost the price of six repeating coils of first quality. It will be advisable to put the telephone mentioned on the phantom, to avoid unbalancing the latter. These coils will cost not far from $15 each installed, which amounts to $90. The lines will have to be transposed in order to get the phantom into balance. The cost of this we cannot estimate, but it is sure to prove fairly expensive. On the whole, there may not be much saving in the use of the phantom idea, and perhaps no saving at all.

It is advisable to do the re-transposing in accordance with the schemes set forth in standard textbooks, so that good results may be secured and additional circuits fit into the system as you grow.

Here and There

North Dakota Convention, Minot, July 18, 19, 20.

Home Company at Louisville Gets Important School Contract.

A new public school building is to be erected in Louisville on East Broadway and the contracts for various portions of the work have already been awarded by the Louisville School Board. The telephone service, which is now an important item in the school work, will be installed by the Louisville Home Telephone Co., and will be complete and up-to-date in every respect, costing $1,510 annually.

Staff Dinner of the National Telephone Company.

At the annual staff dinner of the National Telephone Co., London, one of the main topics of discussion was the impending transfer of the company's system to the British Post Office. When this occurs the municipal systems of Hull and Portsmouth will have the only exchanges outside the Post Office system. Reference to the transfer was made by the chairman, Mr. Albert Anns, and by Mr. George Franklin. Among the prominent members of the staff and guests in attendance were:

Lord Harris, Sir John Gavey, Sir Alexander Kennedy, Major W. A. J. O'Meara, and also Messrs. W. A. Smith, A. M. J. Ogilvie, A. H. Norway, F. Gill, S. J. Goddard, and other prominent members of the staff.

Telephone Dividends a Big Factor in St. Louis.

The St. Louis Star, of June 18, said:

"Summer dividends to St. Louis investors will aggregate $5,667,995. These will be paid in June, July and August. In spite of the fact that 1910 has been known as a 'tight money year' the dividends from the St. Louis financial institutions amount to $1,366,500. Among the corporations paying dividends and the gross amounts are: Kansas City Home Telephone, $47,150; Toledo Home Telephone, $12,187.50; Joplin Home Telephone, $8,125; Kansas City Home Telephone, $74,467.50; Kansas City Long Distance Telephone, $37,825; Kinloch Telephone, $60,000; Kinloch Long Distance Telephone, $37,500; New Long Distance Telephone of Indiana, $42,225; Toledo Home Telephone, $32,250.

Physical Connection and Compulsory Railway Service Cases In Oklahoma.

A complaint has been filed with the Oklahoma corporation commission by the Speermore Telephone Company of Speermore alleging that the Supply Telephone Company would not give physical connection to the Speermore line, and that the company was charging rates higher than allowed by law. The complaint asks that the commission make an order requiring physical connection to be given and that it fix the rates to be charged by both companies.

Complaints were also received from Calumet and from Wewoka asking that the Rock Island install telephones in the depots at those towns.

Fourth of July Celebrants Shoot Up Cables.

The "Sane Fourth" movement should bring joy to the telephone construction man, as well as to nervous people. Louisville, Kentucky is one of the places that had considerable of the old fashioned kind. As a result, Engineer Vincent E. Furnas of the Louisville Home Telephone Co. had on exhibition at his office about half a dozen pieces of cable sheath, each with a neat round hole in its center.

Occasionally such a hole will remain undiscovered until the winter months, for the bullet is often stopped in its course and remains in the cable until the cold weather causes it to contract, fall out and leave the hole in the covering.

Following the recent Fourth, it was found that most of the bullet holes at Louisville occurred in cables strung in the negro districts, as the enthusiasm caused by Johnson's victory was unbounded, and could only be celebrated in a fitting manner by tearing loose with a brace of .44's on the part of the colored brethren.

George B. Roberts General Superintendent of Omaha Company.

Mr. George B. Roberts whose connection with the St. Joseph Home Telephone Company as engineer was severed July 1, upon completing the plant and turning it over to the operating department, has taken a position as general superintendent of the Independent Telephone Company of Omaha. The Omaha company is adding to its plant rapidly now that its financial affairs are in the hands of Receiver Abbott and a competent reorganization committee, and Mr. Roberts will have ample opportunities to utilize his expert knowledge of construction and plant layouts accumulated during the building of several important plants of the Independent field.

Receivers Appointed for National Telephone Company of West Virginia.

Another result of the Continental Telephone Company's appearance in the Independent field has been the receivership of the National Telephone Company declared last week. W. C. Handlan, who has been general manager of the company, and James W. Ewing, were named as receivers. The application for receivership was filed by Andrew J. Howard, brother of John A. Howard, of the Continental company. It is set forth in the bill that the Continental company owns $10,000,000 worth of common stock in the National which was obtained illegally and without compensation. An injunction has been granted restraining the Continental company from exercising its control or interfering in any manner with the National company. It is given out at Wheeling that the interests of the National company are safe and that the receivership will be waived as soon as the dissensions among the promoters are settled. The following companies are included in the receivership: National Telephone Corporation; National Telephone Company of Ohio; National Telephone Company of Pennsylvania; Consolidated Telephone Company; National Telephone Company of Monongahela County; Pittsburg and Wheeling Telephone Company; Beeghley Telephone Company; National Telephone Company of West Virginia and West Virginia Western Telephone Company.

It is understood that a committee, of which Mr. Handlan is a member, is making progress in straightening out the disagreements which led to the application for a receiver for the Continental, which was afterward withdrawn.

Chicago Council Committee Employes Men to Investigate Telephone Rates.

The following appointments have been announced to the staff of accountants and engineers who will assist the council committee on gas, oil and electric light in its revision of the rates of the Chicago Telephone Company.

William J. Hagenah, chief investigator, Madison, Wis., statistician for the Wisconsin Railroad Commission.

Charles A. Honecker, accountant, Chicago; former accountant for the United States Steel Company.

Offices of the staff will be in the Chicago Stock Exchange Building.

"A preliminary survey of the field will be obtained from an analysis of the company's income accounts and balance sheets for each year of its operations, which the company has agreed to submit for our use," said Ald. Pringle, chairman of the committee. "These should show the earnings from operation, the income from sources other than operation and the operating expenses in detail, covering the expenditures for labor and supplies for exchange service, wire plant, expense, traffic, general expenses, taxes, etc. The income accounts will show the deductions from net earnings for interest on funded indebtedness, on floating indebtedness, appropriations to reserves and for construction, dividends, etc., to the final surplus for the year. The balance sheets will show in detail the company's assets and liabilities.

"It will be necessary to obtain, for the purpose of this investigation, the cost of the company's plant used and useful in furnishing the telephone service in Chicago. This can be obtained largely from a review of the construction stages of the plant shown by the vouchers since the first year of the company's existence. The cost of furnishing service with this plant will be obtained from an analysis of the company's operating expenses for a reasonable period—probably two years—which likewise will be obtained from the vouchers and original records of the company.

"Ever since the question of ratemaking has been under consideration the company has been compiling a vast amount of operating data, bearing upon the question of the use of the service and its cost. These figures will be analyzed and doubtless much can be used in connection with the present work."

Ineffective Bell Activity in the Neighborhood of South Bend.

The Central Union Telephone Company has been spending immense amounts of money at South Bend, Indiana, in a new plant which it is endeavoring to bolster up at the expense of its Independent neighbors by securing connections with local companies in that vicinity, and entering into competition with Independent plants at places where it has no connections.

It recently made a hard fight to get on the board of the local company at Plymouth, with a hope of replacing the Independent lines of the South Bend Home company for toll business. The public as well as the City Council at Plymouth decided that they did not need the Bell company, as its record is well known in this vicinity, and the company is virtually turned down at that place. During the last eight years several unsuccessful attempts have been made to get the Plymouth business away from the South Bend Home Telephone Company. Another example of the Central Union's inconsistency is its attempt, as it would itself say, to "inflict the burden of duplication" upon certain places in St. Joseph county.

Indirectly, through a farmers' mutual telephone company, it has asked for a franchise at Walkerton, and North Liberty in St. Joseph county, and La Paz in Marshall county, but has been refused entrance to each place. As the Central Union company does not believe in competition, so it says, this is very apparently an attempt to destroy the business of other companies for the sake of building up its own, and the people in this section of Indiana very rightly refuse to tolerate this sort of piratical tactics on the part of a Bell telephone company.

Project to Merge Telephone System of Rock Island may Involve Forfeiture of Independent Plant.

The Rock Island *News* of Rock Island, Illinois, prints under big headlines a statement that directors of the Union Electric Telephone Company, operating an Independent plant in that city, are trying to merge with the Bell company. The control of the Union company is held in Pennsylvania. The *News* vigorously urges that if this plan is carried through it will only be by the connivance of the council with the Bell company to strike out the forfeiture clause in the Union franchise in event of its merging with a competing company, and urges the public to be prepared to protect the city's interests by preventing such action on the part of the council.

The article says in one point: "The people of Rock Island should make known to their aldermen very emphatically that compliance with this Bell merger scheme would be an outrage and not to be listened to.

"Note the smooth talk this Mr. Stucker, the president of an "Independent" system, gives out about "competition being a failure" all over the country. Of course it is a failure in many places where the Bell monopoly is intrenched and private competition is attempted, because this monopoly is incessant as a mole in its underground operations to circumvent and render useless all competition."

Postal Company to Cut Loose From Bell in Oklahoma.

A report from Guthrie, Oklahoma announces the incorporation of a local subsidiary of the Postal Telegraph and Cable Company, to conduct a telegraph business in that state. It is understood locally that the taking out of this charter means an ultimate complete separation between the Postal and the Pioneer Telephone & Telegraph Company, the Bell subsidiary, which has been carrying the Postal wires upon its poles.

Expansion of British Post Office Telephone System.

The Postmaster General of Great Britain, Mr. Herbert Samuel, in dealing with the Post Office estimates before the House of Commons on June 23, mentioned gross figures of the post office business covering the expansion of the telephone business incidentally. During the past year 123 new exchanges have been opened and the number of subscribers to the post office system has increased by 12 percent. The number of conversations on the toll lines has increased by 15 percent. Arrangements are now being made in the department looking toward the taking over of the system of the National Telephone Company, which will take place at the end of next year. Two Departmental committees are at work within the Post Office, one dealing with the question of telephone plant, and the other dealing, among other details, with the question arising out of the transfer of the telephone staff and the arrangements for taking a general inventory.

A bill providing for the transfer will probably be introduced at the beginning of the next session of the House at which time the question of finance will be considered.

Telephone Promoter Arrested for Forgery and Escapes.

Word comes from the Pacific Coast that George L. Price whose arrest was mentioned in the condensed news reports of last weeks' TELEPHONY, taken on charges of obtaining money by false pretenses and issuing fictitious checks, which alleged wrongdoing took place in San Francisco, was arrested at Klamath Falls, Oregon at the request of the San Francisco police department. At this place he is reported to have promoted a small telephone company. Circulars issued by J. B. Martin, chief of police of San Francisco, show a weak looking man, age 30, and gave his occupation as photographer and advertising agent. Price, while being taken to San Francisco from Klamath Falls, jumped from the train while it was going at full speed through the mountains, and escaped.

New Independent Telephone Association in Eastern Pennsylvania.

Representatives of all the Independent telephone companies throughout Erie, Chautauqua and Crawford counties, met in Erie, Pa., last week and organized the Chautauqua-Erie-Crawford Independent Telephone Association. The object of the organization is for closer fellowship among the different lines in this vicinity, which will greatly improve the long distance service.

Last February, upon invitation of the Edinboro Telephone

Company, a number of Independent men met and appointed a committee to prepare a constitution for a permanent organization, and arrange for a convention for permanent organization. The constitution was prepared and the convention as above mentioned called. The following officers were elected: John Z. Miller, of Erie, president; J. H. Wright, of Jamestown, N. Y., vice president, and G. R. Knowlton of Edinboro, secretary-treasurer. Representatives from every town having an Independent exchange in the three named counties were present at the convention, and much enthusiasm was displayed over the results of the meeting.

After the meeting a brief program was carried out, including a brief history of the Independent telephone companies by John Z. Miller; "The Opposition," by C. R. Knowlton; "How to Raise the Rates," by C. W. Jones of Cambridge Springs, and others. Lively discussions followed the reading of the various papers.

Telephone Company First Dividend Payer in White Pine County, Nevada.

The White Pine Telephone Company of Ely, Nevada, has declared a dividend of 2 per cent payable to stockholders of record June 30. This is the first dividend ever paid by this company, and is thought to be the first dividend in the history of any local corporation in White Pine county. Three years ago the White Pine Telephone Company had an indebtedness of $16,000. Bonds to the amount of $50,000 were authorized. Of this amount $10,000 worth were disposed of, the money being used for reconstruction and improvements. The company has fully paid off its debt and reports a healthy balance in its treasury.

The balance of the bonds will be issued as expansion is required.

Mr. James S. Bennett is manager of the company.

Another Bell Merger In New York.

The New York Telephone Company has filed with the Secretary of State a certificate stating that it has merged with it the New York & Pennsylvania Telephone Company. The merger was accomplished at a meeting of the directors of the New York Telephone Company on June 29. Ownership of all the stock of the New York & Pennsylvania company, was vested before the meeting in the New York Telephone Company. Signatures of the president and secretary of the New York Telephone Company are attached to the document.

New York Public Service Commission Provides Quarters for Telephone Force.

A lease has been signed by the Public Service Commission, Second District, for the residence of E. A. Durant, 19 Washington avenue, Albany, N. Y. The building will be fitted up for new offices for the additional force of employes made necessary by recent legislation placing telephone and telegraph companies operating within the state under the jurisdiction of the commission.

"American Banker" Discusses Sherman Act to Penalties of which it Says the A. T. & T. Company is Liable.

The *American Banker*, a high class journal which probably reaches the most conservative class of people of any journal in the country, has definitely stated its opinion that the American Telephone and Telegraph Company is liable to all penalties of the Sherman Act. This statement is absolutely clear and straightforward, and confirms in every way the statements which have appeared in TELEPHONY.

The *American Banker*, however, seems to be lined up with "the interests." It takes the ground that the trust combinations having grown up in violation of the law to their present size is proof that they are more essential than the law, and that they and not the law should survive. It cites a list of "holding" companies of the country showing 1,198 corporations with 8,110 subsidiaries, and $10,612,372,489 capital, which represent violations of the Sherman law.

If an employe of one of these companies taps the till he is sent to jail, as he should be. Respect for law rather than moral grounds is frequently urged upon employes as a reason for honesty toward the company and in their private relations in society, and yet in this article in the *American Banker* one finds a conservative and powerful journal advocating the repeal of the law because ten billions of capital have been grouped in defiance of the law, and, as alleged, "the dissolution of these illegal combinations would shatter into fragments the entire structure of business." This sort of argument appeals to the law abiding public as being very much on the principle "make us a gift or we will hold you up." An answer which covers the case is available in the judicial utterance of Chancellor Blount, of Mississippi. The people of the United States will never approve of a business system which will limit a great field for investment to the control of a few monopolistic operators, many of whom are all too closely associated with the distrusted Wall Street mechanism.

Gets "Universal Service" by Messenger.

A special to the Indianapolis Sun, from Clark Station, Ind., June 20, says:

"This place has no telephones.

"In spite of the fact that every citizen has signified a willingness to invest in a talk machine at reasonable rates, the tingalings refuse to come along and make themselves at home. Recently an inhabitant met a salesman and told him of it, and the salesman said: 'This must be the home of Rip Van Winkle —lead me to him.'

"Clark Station is two miles from Gary, and but 24 miles from Chicago."

According to statistical information available, this place had 100 inhabitants in 1907. The newspaper writer who wrote the dispatch evidently is unconvinced by blatant Bell advertising that restricts the universe to points reached by the Bell telephone for he goes on to confidently assert that the place is "on the map."

Farmers Wish to Build Mutual Lines in Marshalltown, Iowa.

One of the recent developments at Marshalltown, Iowa is a movement on the part of the farmers to inaugurate a new competitive telephone system with lower rates by extending their lines into town and putting in a mutual switchboard. There are various points at issue between the farmers and the Marshall Telephone Company as well as between the Marshall Telephone Company and the City and between the company and its own subscribers.

Telephone People Will Vote for a Sane Fourth Next Year.

Jas. B. Hoge, manager of Telephone Fire Insurance Exchange, the Independent co-operative insurance company which is doing a much needed work in getting telephone insurance on a reasonable basis, reports that it had its first loss on one of its policies at Benton, Pa., on July 4. Its part of the loss will not exceed $400. Telephone Fire Insurance Exchange hereafter will use its influence to have the "sane and safe" 4th of July adopted in all cities where it carries insurance.

Cuyahoga Company Declares Regular 1 1-2 Per cent Quarterly Dividend.

On July 31, holders of preferred stock of the Cuyahoga Telephone Company, Cleveland, will receive their regular quarterly dividends of 1 1-2 per cent.

From Factory and Salesroom

Bulletin on Cord Repairs.

The Runzel-Lenz Electric Manufacturing Company, Chicago, manufacturers of the well known Premier BB steel conductor switchboard cords, has issued a single sheet bulletin which will undoubtedly find a prominent place in the exchange repair departments of nearly every telephone company. A reduced sized reproduction is here given, showing the instructions which in so simple a form seem to have definitely conveyed all the important steps in making cord repairs. This bulletin is printed on a heavy grade of paper mounted on a cloth back so that is can be hung up in the repair department with the assurance that it will last until everyone who has occasion to do this kind of work is familiar with the best method of repairing cords.

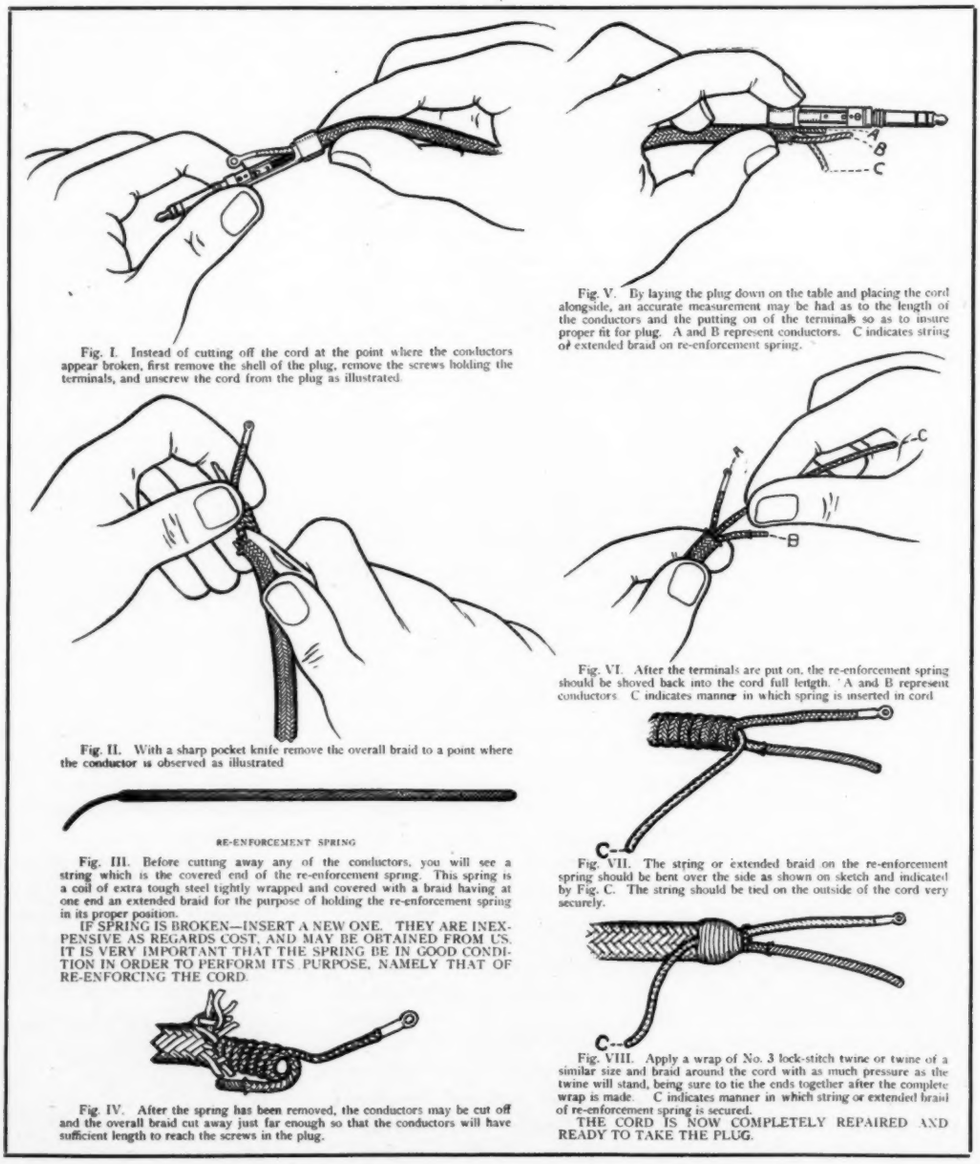


Fig. I. Instead of cutting off the cord at the point where the conductors appear broken, first remove the shell of the plug, remove the screws holding the terminals, and unscrew the cord from the plug as illustrated.

Fig. II. With a sharp pocket knife remove the overall braid to a point where the conductor is observed as illustrated

Fig. III. Before cutting away any of the conductors, you will see a string which is the covered end of the re-enforcement spring. This spring is a coil of extra tough steel tightly wrapped and covered with a braid having at one end an extended braid for the purpose of holding the re-enforcement spring in its proper position.

IF SPRING IS BROKEN—INSERT A NEW ONE. THEY ARE INEXPENSIVE AS REGARDS COST, AND MAY BE OBTAINED FROM US. IT IS VERY IMPORTANT THAT THE SPRING BE IN GOOD CONDITION IN ORDER TO PERFORM ITS PURPOSE, NAMELY THAT OF RE-ENFORCING THE CORD.

Fig. IV. After the spring has been removed, the conductors may be cut off and the overall braid cut away just far enough so that the conductors will have sufficient length to reach the screws in the plug.

Fig. V. By laying the plug down on the table and placing the cord alongside, an accurate measurement may be had as to the length of the conductors and the putting on of the terminals so as to insure proper fit for plug. A and B represent conductors. C indicates string of extended braid on re-enforcement spring.

Fig. VI. After the terminals are put on, the re-enforcement spring should be shoved back into the cord full letgth. A and B represent conductors. C indicates manner in which spring is inserted in cord

Fig. VII. The string or extended braid on the re-enforcement spring should be bent over the side as shown on sketch and indicated by Fig. C. The string should be tied on the outside of the cord very securely.

Fig. VIII. Apply a wrap of No. 3 lock-stitch twine or twine of a similar size and braid around the cord with as much pressure as the twine will stand, being sure to tie the ends together after the complete wrap is made. C indicates manner in which string or extended braid of re-enforcement spring is secured.

THE CORD IS NOW COMPLETELY REPAIRED AND READY TO TAKE THE PLUG.

Reproduction of Card Illustrating Method of Repairing Cards.

WM. J. MURDOCK COMPANY, Chelsea, Mass., is the new name of the corporation which succeeds the well known firm of W. J. Murdock & Company. The corporation directorate is essentially identical with the membership of the former firm, which has built up a commendable business in the well known Murdock solid receivers and other specialties. The officers of the corporation are, Wm. J. Murdock, president; James M. Murdock, vice president, and Daniel R. W. Murdock, treasurer.

Everstick Anchor Company in New Factory at St. Louis.

Jasper Blackburn, who has been building up a big business based upon the merits of his product, the well known Everstick anchors and Blackburn's Telescoping Auger Handles, has moved into the company's new factory at 1622 & 1624 North Eighth St., St. Louis. This factory was built especially for the manufacture of the goods above mentioned and facilities for making and distributing the product are very much larger than in the old location, so that the company is now in a position to adequately handle its growing business. Mr. Blackburn reports that during the Spring his business has been very satisfactory and increasing every month. Many of the largest companies throughout the United States are using the Everstick anchors successfully and ordering them in large quantities.

Cuyahoga Company to Install Clement-Automanual System.

The announcement is made at Cleveland that the Cuyahoga Telephone Company is to install, in a branch exchange, 300 lines of the Automanual equipment manufactured by the North Electric Company, of the same type which has been in service at Ashtabula, Ohio.

This exchange will be considered an experimental installation for the time being, to give the company a chance to test out the apparatus and service rendered by it. If successful additional equipment of the same type will be installed.

C. H. North, of the North Electric Company, has stated that his company expects to have the initial 300 lines in operation by October 1.

THE DIAMOND RUBBER COMPANY, Akron, Ohio, has issued a booklet under the title, "Rubber Covered Wires and Cables." It contains tables from which the price of the various kinds and sizes of rubber covered wire can be figured with copper

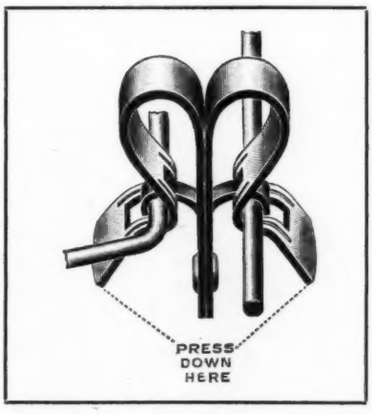
at any base between 12 and 25 cents. Specifications of the company's rubber covered wire are given as are also miscellaneous tables relating to rubber covered wire and cable.

Stromberg-Carlson Company Issues Catalogue of Composition and Hard Rubber Prices.

A catalogue which will be appreciated by the manager who finds it inconvenient to retain code numbers and prices of small hard rubber and composition parts which are used in the business, has just been issued by the Stromberg-Carlson Telephone Manufacturing Company, Rochester, N. Y. It is a big, single sheet, folded list of composition and rubber parts used in the company's standard apparatus, giving code numbers and prices, and descriptive illustrations. The items listed include transmitter mouthpieces, receiver shells, ear caps, terminal plugs, dummy plugs, plug hole stops, crank handles, caps, and bushings.

New Fahnestock Connector.

The Fahnestock Electric Company, 129 Patchen Ave., Brooklyn, N. Y., has just placed on the market two new connectors. One is for use as a test connector or for connecting drop wires to the main line. It is made in three styles for copper or iron wire. It will snap over a No. 12 iron wire or its equivalent



New Type of Fahnestock Connector.

size in copper. One wire may be disconnected without loosening the grip on the other wire.

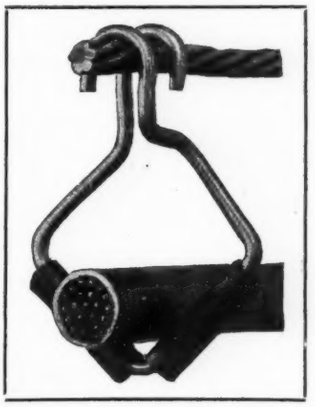
The other style of connector is intended for use in joining jumpers or bridle wires to the main line. It has one large connector and one small. The large side snaps over any size line wire up to No. 12 iron or its equivalent size of copper wire. The small side, which will take up to No. 14 copper, does not snap over the wire but holds the free end of the jumper.

The Stromberg-Carlson Telephone Manufacturing Company, Rochester, N. Y., has issued a third and revised edition of its Bulletin No. 1000 on mine telephones. The new edition has four additional pages including information in reference to the mine signaling sets, and some circuits, showing how to install the Mine-A-Phone system. It will, no doubt, be of considerable value to prospective users of mine telephone and signaling equipment.

A New Cable Hanger.

A new style of cable hanger has recently been placed on the market by the Eureka Supply Company, Camden, N. J. It is known as the Rex cable hanger and consists of a galvanized wire cable receiving frame, with opposite curved hooks to be clamped and to engage the strain or messenger wire. Fibre tubes treated so as to be impervious to moisture are placed on the lower sides of the frame, as shown in the illustration. These tubes act as rollers so that the cable can be installed easily and without injury.

It is also claimed that labor costs will be reduced to the



The Rex Cable Hanger.

lowest point by this method of little insulated pulleys for the complete distance.

A New Type Vacuum Lightning Arrester.

About two years ago the Siemens & Halske Company, with home office at Berlin, Germany, perfected a type of vacuum lightning arrester which is now extensively used abroad, having been adopted for train dispatching, telephone and telegraph lines of the German Imperial Government.

The company first started manufacturing arresters of this type in the early nineties, the first one having the shape of an inverted "U" tube similar to an incandescent lamp with both terminals at one end. Through the latter it was found difficult to maintain the high insulation. For this reason this form was discarded for the construction shown in Fig. 1 in which special attention has been given to this point. A still newer construction than shown in Fig. 1 has now been brought out, which differs only in that the vacuum arrester cartridges have knife blade ends for the contact points instead of ferrule ends. Engineers

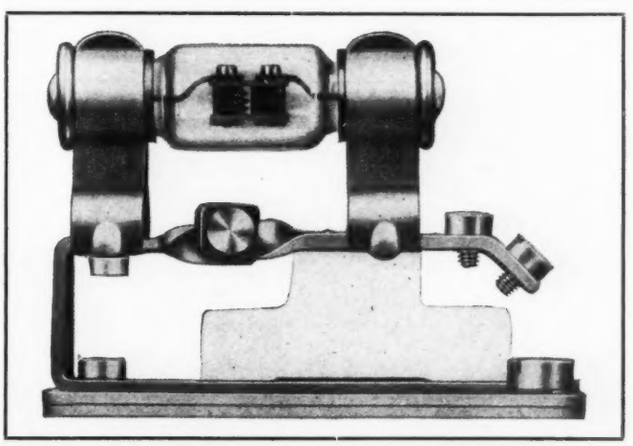


Fig. 1. General View of Siemens & Halske Vacuum Lightning Arrester.

The gap of the arrester is between two toothed surfaces are divided on the merits of the two styles, so that both are now in use.

of carbon which are placed in a glass tube in which a high vacuum has been produced. Due to the high vacuum

the instrument is very sensitive; it can be made to discharge at as low a tension as 300 volts if necessary. At the same time the surfaces are wide enough apart to obviate any tendency to short-circuit, and being in a sealed

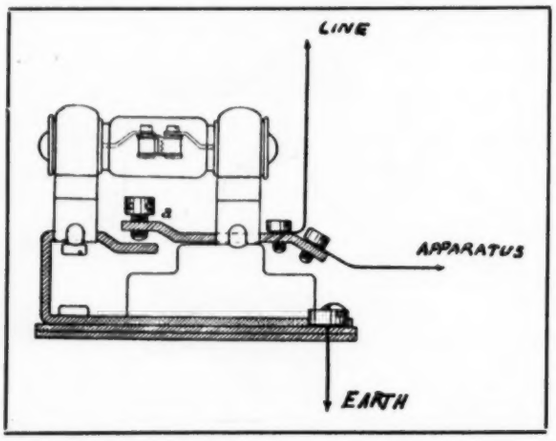


Fig. 2. Diagram of Connections for Wiring of Vacuum Type of Arrester.

enclosure they are not affected by moisture or dust. Any degree of insulation wished can be kept permanently at the value chosen.

The general form of the mounting is such that the insulation of the system is in no way decreased by accumulation of moisture or dust on the cartridge. It has even been shown that in case the glass of the cartridge breaks due to an extra heavy discharge, no short-circuit is formed, and a new cartridge can easily be inserted without delay. The arrester as mentioned above has the form of a cartridge with ferrule shaped metallic end caps which fit into clips of the mounting. The connections for line apparatus and ground are shown in Fig. 2. The arrester may be mounted horizontally or vertically. The set screw, *a*, shown in Fig. 2, forms a secondary gap in parallel with the one inside the cartridge for grounding large violent discharges or as a temporary arrester in case the cartridge has been destroyed, thereby greatly increasing the efficiency of these arresters.

The mountings are built for 1, 2, 3, 4, 7, 10 and 12 cartridges, having a common metallic base plate to which the ground connection is made.

Over very long transmission lines it is an absolute neces-

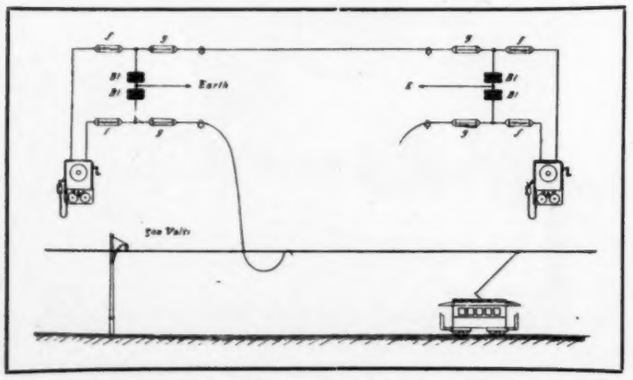


Fig. 3. Illustrating Conditions of Protection from High Voltage Current.

sity that the lines are kept "clear." Speech over these is greatly impaired by bad or ever-varying insulation, and it is therefore of the utmost importance to establish constant high insulation.

A recent investigation of the vacuum lightning arresters has shown their value for loaded lines where it is essential to lessen the attenuation of the wave and to keep the value of the famous β as high as possible.

A special form of the vacuum lightning arrester is shown in Fig. 4. Mounted on either side of the cartridge is a line or safety fuse, the whole being set on a porcelain insulated block. These are for use with all metallic circuits. Such lines frequently become charged with such a high potential against the earth in consequence of atmospheric influence or induction due to a high tension transmission circuit being in the immediate neighborhood that, owing to its equalization in the case of a sudden contact with the earth, the inside lines and the apparatus are subject to injury, whilst attendants are liable to danger. This applies also in the case of contact of the low tension metallic circuit with a heavy current line, in which case the high voltage of the latter passes into the double wire circuit without causing the fuses to melt, as an earth connection does not exist. This difficulty is entirely obviated by the combination of vacuum lightning arresters and fuses shown in Fig. 3, since the vacuum lightning arresters B_1 will produce the necessary earth connection so that the heavy current causes the corresponding fuse *g* to melt. This arrangement can be greatly improved by using delicate fuses *f* which protect the apparatus against branch currents.

A third form of these arresters has the cartridge mounted vertically in a bell-shaped receptacle of hard rubber with

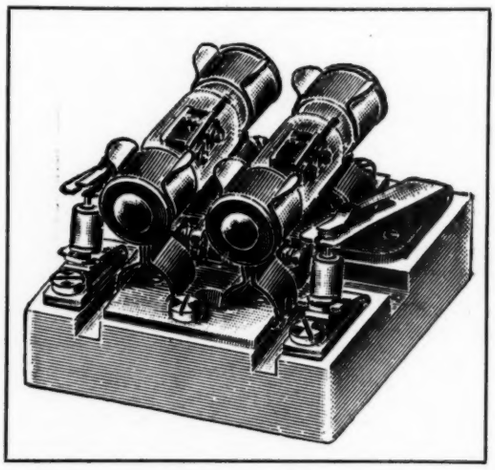


Fig. 4. Special Type of Vacuum Arrester, Mounted with Fuses.

a line connection at the top and earth connection at the bottom. The largest use of these is on insulated lines at points where leads are taken into the buildings.

The Diamond Expansion Bolt Company, 90 West Street, New York, has made a special study of interior block distribution, which has led to the production of a combined cable clamp and bridle ring.

Baker & Company, Newark, N. J., conducts a business which, indirectly, contributes as much to the efficiency of telephone operation as that of any manufacturing house in the world. This firm works up platinum into wire, sheet, rivets and contacts. In the modern telephone heavy reliance is placed in platinum contacts for permanent and reliable operation of all make and break joints. While the metal platinum is expensive even to such an extent as to be felt in the first cost of the telephone, for the exceedingly small quantity used in each instrument, by the manufacturer at least, its proper employment has been the means of bringing about what, if it could be figured in the aggregate, would show an enormous reduction in the cost of maintenance of telephone apparatus.

Condensed News Reports

Officers of companies are earnestly requested to forward us promptly all financial and other statements as soon as issued and any items of interest as to their plants and systems

PERSONAL.

MR. A. B. CONKLIN, formerly of Streator, Ill., has been elected vice president and general manger of the Atlanta Telephone & Telegraph Company, Atlanta, Ga.

THE TOLL CLEARING COMPANY at Indianapolis, Indiana, is now located at 230 North Meridian Street, Indianapolis. Since July 1, E. V. Hanes has been manager and W. J. Uhl of Logansport, secretary and treasurer.

MR. W. K. M'QUOWN, manager of the Home Telephone Company, Atchison, Kansas, was recently married to Miss Alice McCullough of Gilson, Ill. Mr. McQuown is one of Kansas' progressive young telephone men and has made many friends throughout the field, who will wish him much happiness.

MR. J. J. CARTY, chief engineer of the American Telephone & Telegraph Company has been invited to attend the International Conference of Telephone and Telegraph Engineers which is to be held in Paris, France, September 4 to 11. Hitherto this conference has been confined to representatives of European telephone systems controlled by the several governments of Europe.

NEW COMPANIES.

BAY MINETTE, ALA.—The Alabama Telephone and Telegraph Company has been chartered with a capital stock of $5,000. The incorporators are: Ellis L. Munna, Spalding Peck, and J. H. Haswell. The latter will act as general manager. The company will operate in Baldwin, Conecuh, Escambia, Monroe and Washington counties.

COVENTRY, COLO.—The Naturia Valley Rural Telephone Company has been organized by G. A. Akers, B. H. Ross and K. B. Northrop.

COTTONWOOD, IDAHO.—The Cottonwood Telephone Company has been organized by R. E. Bruner, John Foreman, H. G. Eckerman and George Terhaar.

SULPHUR WELL, KY.—Articles of incorporation have been filed by the Sulphur Well Home Telephone Company. The capital stock is $350, and the incorporators are L. Beston, O. E. Beston and S. M. Marcus.

AUGUSTA, MICH.—The Augusta Telephone Company has been chartered by the secretary of state with an authorized capital stock of $6,000. The incorporators are Nelson V. Bird, Chas. Case and H. J. Richardson.

COLDEN, N. Y.—George Koerner, Glenwood; C. N. Darbee, West Falls; C. S. Rich, Springville; J. G. Sigler, East Aurora, are the incorporators of the Golden-West Falls Telephone Company. The company is capitalized at $7,500, par value of shares $75.

GRANTON, N. Y.—The Granton, Finch Valley and Loomis Telephone Company has been incorporated by the following: Charles Constable, Cleaver; William H. Vanalain, Tompkins; Theo. Turtur, Cleaver; Seymour Shackelton, Cleaver; Grant Layman, Cleaver, and A. R. Babcock, Granton. The company is capitalized at $1,000.

PRESHO, N. Y.—The West Lindley Telephone Company has been incorporated with a capital stock of $600. The incorporators are Andrew J. Hill, Presho; Wallace Cook, Addison, and Philip Morse, Addison.

ALBANY, ORE.—The organization of the Halsey Mutual Telephone Company was effected a short time ago. F. M. Smith was elected president and R. A. McUlly, secretary.

SALEM, ORE.—The Salem-Fairfield Telephone Association, with an authorized capital stock of $3,000, has been incorporated by M. W. Mahony, Fairfield, Ore.; George W. Weeks, Salem. Ore.; Alexander Harold, Brooks, Ore.

MARIANNA, PA.—The Marianna & Scenery Hill Telephone Company, with an authorized capital stock of $7,500, par value per share $25, has been incorporated by the following: J. W. Shidler, Marianna; S. G. Fulton, W. Bethlehem Twp.; Chas. Wonsettle, W. Bethlehem Twp. Attorney incorporating is Robt. W. Parkinson, Jr., Washington, Pa.

AUSTIN, TEX.—The Nueces Valley Telephone Company of Corpus Christis, has been chartered by the secretary of state. The company is capitalized at $1,600 and the incorporators are W. G. Sutherland, E. R. Kleberg, C. C. Wright and others.

ELDERON, WIS.—A. J. Plowman, F. E. Bump and H. H. Munson are the incorporators of the Elderon Telephone Company, newly incorporated with a capital stock of $10,000

CODY, WYO.—The Shoshone Valley Telephone Company has been incorporated with an authorized capital stock of $25,000. The directors are: Len L. Newton, Charles Arthur Evans, Milo M. Harding, Burton W. Baker, Fred C. Barnett, all of Cody, Wyoming.

FINANCIAL.

PITTSFIELD, ILL.—The capital stock of the Pike County Telephone Company has been increased from $75,000 to $100,000. A semi-annual dividend of 3 per cent was recently declared.

FT. WAYNE, IND.—A sum approximating $25,000 will be disbursed by the Home Telephone Company as midsummer dividend payments on its preferred stock.

GRAND RAPIDS, MICH.—At the annual meeting of directors of the Citizens Telephone Company a quarterly dividend of 2 per cent was declared payable. This will be the fifty-second consecutive dividend, in this amount, and about $70,000 will be disbursed.

CLEVELAND, OHIO.—The directors of the Cuyahoga Telephone Company have declared payable a quarterly dividend of 1½ per cent payable on July 31 to stockholders of record July 15.

SOMERSET, OHIO.—The Somerset Telephone Company has filed an amendment to its charter increasing the capital stock from $25,000 to $35,000.

KRUMSVILLE, PA.—The Kutztown Rural Telephone Company has filed an amendment to its charter increasing the capital stock from $10,000 to $20,000.

SOMERSET, PA.—The Somerset Telephone Company has filed an amendment to its charter increasing the capital stock from $60,000 to $200,000. Josiah Swan is secretary of the company

WINDBER, PA.—The Windber Telephone Company has filed an amendment to its charter increasing the capital stock from $25,000 to $50,000. John A. Hartman is secretary of the company.

WENATCHEE, WASH.—The stockholders of the Farmers Telephone Company are arranging to increase the capital stock of the company from $50,000 to $150,000. This company was organized about six years ago and its growth has been rapid and steady.

LA CROSSE, WIS.—The La Crosse Telephone Company is sending out to stockholders semi-annual divided checks of 4 per cent on common stock and 3½ per cent on preferred.

FRANCHISES.

JONESBORO, ARK.—The Home Telephone Company is soon to begin the remodelling and improvement of its system. It is estimated that the improvements will cost about $30,000.

MARION, ARK.—Plans have been practically completed whereby about 60 miles of telephone line will be placed in service along the St. Francis levee in Eastern Arkansas at an early date. The system will be built at an estimated cost of $12,000. The L. C. Going Telephone Company of Marion will pay $6,000 toward this, $3,000 will be paid by the land owners who will use the service, and $3,000 by the St. Francis Levee board. It is estimated that about 50 telephones will be connected to the lines to begin with.

DODGE CITY, KANS.—The Dodge City Telephone Company contemplates placing a large portion of its wires in underground conduit, and wherever wires are maintained on poles, the poles will be removed to the rear of the lots.

GRAND FORKS, N. D.—The Tri-State Telephone Company will soon begin construction operations in this city. It is estimated that the cost of establishing a system will be $20,000. A central exchange will be equipped.

BURNS, ORE.—The Union Telephone Company is making many improvements to its system throughout Harney county. A new switchboard is to be installed, and the system will be practically rewired. The company will also institute night and day service, a commodity which has not been enjoyed by the subscribers heretofore.

SCOTTSVILLE, PA.—The city council recently granted to the Scottsville Telephone Company, a franchise to construct and maintain a telephone system in the city. The work of constructing the system will begin almost immediately.

HAMLIN, TEX.—A number of citizens of Hamlin have asked the City Council for a franchise for a local and long distance telephone system at this place. If the franchise is granted a company will be organized to build a system. Those interested in establishing the new company are H. A. Mugge, W. M. Green, F. R. Allison, Baker Hoskins and M. Greenspun.

CONSTRUCTION.

KISSIMMEE, FLA.—The Osceola Telephone Company announces that soon lines will be constructed to Bassinger. A telephone line has become a necessity owing to the extensive construction of manufacturing concerns in that section. The Osceola company recently increased its capital stock from $2,500 to $10,000.

LIBERTYVILLE, ILL.—The Lake County Telephone Company

has received 400 cross arms which will be used in extending lines from Libertyville to Rockefeller and west of Wauconda.

NEWMAN, ILL.—The Douglas County Telephone Company is making extensive improvements in its system. Some cable is being installed and the lines overhauled generally.

HAYS, KANS.—The Hays Telephone Company will soon entirely reconstruct toll line between Hays and Russell, a distance of 26 miles. It will be made a standard No. 10 copper-metallic circuit.

HUMBOLDT, KANS.—The Humboldt Telephone Exchange Company will soon entirely rebuild its telephone system. The wires will be taken from the street and erected in the back lots and alleys.

PLEASANTON, KAN.—The Pleasanton Telephone Company has ordered material for the extension of its system. About 1,000 feet of cable will be added to 5,000 already in use in the system.

HANCOCK, MD.—John J. Hertzel, owner of the Round Top Cement Works is constructing a telephone line around Hancock and Herkeley Springs, W. Va., to connect his industries with the exchange at the latter place.

SUTTON, NEBR.—The Sutton Telephone Company has purchased a lot and will soon erect a new exchange building.

FRANKLIN, N. H.—The Citizens' Telephone Company is laying plans for extension of its system. Subscribers for service are being secured very quickly, and many new lines will be constructed.

HALLOCK, N. D.—H. L. Wheeldon of Beech, N.D., is assisting J. Kopan of the local telephone system in recabling the plant. About 5,000 feet of new cable will be strung.

STANLEY, N. D.—The Sunny Central Telephone Company, operating throughout the district south of Stanley, is planning to extend its lines into Stanley. Other lines will be built in a southerly direction.

PIERRE, S. D.—The State Capitol Commission has awarded the Dakota Central Telephone Company the contract for installing a telephone system in the capitol. Necessary trunk connections will be provided by the company, and a private branch exchange of 60 telephones installed in the capitol.

NORTHFORK, VA.—The Northfork and Bradshaw Telephone Company is arranging to build some extensions to its system. A. A. Richardson, La Fayette, Va., is superintendent of construction.

SALEM, VA.—The Virginia and Tennessee Telephone Company will soon construct telephone lines from Lafayette to Bradshaw and then to North Fork.

LUCK, WIS.—The Equity Telephone Company is at present ordering material for the construction of some extensions to its system.

RIGA, RUSSIA.—It is reported that the Riga Telephone Company plans to establish long distance lines between Riga and Pernau, at the head of the Gulf of Riga, a distance of 100 miles; Riga to Dorpat, a distance of 160 miles, and Riga to Fellin, a distance of 142 miles.

ELECTIONS.

JULIAETTA, IDAHO.—The Fox Ridge and Juliaetta Co-operative Telephone Company has elected officers to serve for one year ,as follows: W. A. Barnes, president; J. C. Grosedose, vice-president; S. T. Dunlap, secretary; O. U. Miles, treasurer; Columbus C. Clark, manager.

DIXON, ILL.—The directors of the Home Telephone Company met recently and elected officers as follows: President, J. C. Flower, Joliet; vice president, E. N. Howell, Dixon; secretary, C. B. Cheadle, Joliet; treasurer, W. C. Durkes, Dixon.

WILLMER, MINN.—The stockholders of the Kandiyohi County Telephone Company held their annual meeting recently, 114 votes being represented. Reports from the different officers showed that the company was in the best of condition and it was voted to assess each share $10, which will clear up all outstanding indebtedness and probably be the last assessment the share will be asked to pay. The officers elected for the ensuing year are: President, P. J. Haley; vice-president, H. B. Eddy; secretary, J. Ed. Nelson; treasurer, F. G. Handy; board of directors, P. J. Haley, H. B. Eddy, Nels Norell, C. O. Bergquist, John Wicklund, F. C. Peterson, J. Ed. Nelson, Chas. Isaacson, A. M. Hedin, Rasmus Peterson and F. G. Handy.

MISCELLANEOUS.

BASCO, ILL.—The Mississippi Valley Telephone Company is moving its exchange to more commodious quarters in the Boos and Bunnell building.

NEWTON, IA.—The Jasper County Telephone Company was refused a new franchise by the citizens a short time ago.

LOUISVILLE, KY.—The Telepost Automatic Telegraph Company has leased a building at 338 West Main street. Mgr. Shumaker said that the company has made complete arrangements with the Independent Telephone Company to use its wires between Louisville and Indianapolis, to which point all messages will be sent from the local office. Other cities that will be reached from Louisville, are, Terre Haute, Ind., Chicago, and Springfield, Ill., Sedalia and St. Louis, Mo. It was learned from the Independent Telephone and Telegraph Company that the Telepost company has a five-year lease for the use of its lines to Jonesville, Ind., and from there to Indianapolis the Telepost company will have use of a composited line of the New Long Distance Telephone Company.

COLLY, KY.—The Letcher County Home Telephone Company has engaged E. Franklin as engineer in charge of construction of telephone lines between Whitesburg, Mayking, Sergent and Haker, Ky. The company will open bids for construction material and equipment at once.

WHITESBURG, KY.—J. L. Comann, of Norton, Va., has purchased the lines of the Whitesburg Telephone Company. Mr. Comann will overhaul and repair the lines, and will also build some extensions over the county. One line will be built from Whitesburg to Line Fork, and one to Stonega, Va. It is possible also, that Mr. Comann will put in a new switchboard.

ANACONDA, MONT.—The Montana Independent Telephone Company has added 55 miles of long distance lines to its system in the acquisition of the Silver-Lincoln line.

LAUREL, MONT.—A fire entailing a total loss of $30,000, completely destroyed the exchange of the Mutual Telephone Company. Some of the fixtures, however, were saved. The loss to the Mutual company is estimated at about $1,000. The Bell company suffered a loss of about $200 due to damage done to wires.

COLUMBUS, OHIO.—The Norfolk and Western Railway Company is installing a telephone system for train dispatching on the Columbus division. Three circuits will be put on this division, one between Portsmouth and Williamson, one between Portsmouth and Columbus, and the third between Portsmoutb and Cincinnati.

TECUMSEH, NEB.—The Johnson Home Telephone Company will have a booth and a rest tent on the Tecumseh Chautauqua grounds.

WYMORE, NEB.—The Bell Telephone Company's exchange was recently destroyed by fire.

PLATTSBURG, N. Y.—The Clifton Telephone Company added 60 subscribers to its list within the past two months ,and continues to take more at the same rate. A line is being built by the company at present between Plattsburg and Saranac Lake, by way of Dannemore, Redford, Clayburgh, Goldsmith and Bloomingdale.

GUTHRIE, OKLA.—The Speermore Telephone Company has filed a complaint with the Corporation Commission charging A. J. Stanley, owner of a small telephone company with cutting and grounding its wires. The trouble is reported to have arisen over the demand of Mr. Stanley for a half and half distribution of joint rates.

CHAMBERSBURG, PA.—The Chambersburg and Gettysburg Electric Railway Company is completing a private telephone system along its route and cars will be operated by the telephone. The Telephone boxes will be placed at distances of about 1,000 feet apart.

TACOMA, WASH.—The DeLane Tours Company has made application for permission to construct a telephone along the county road from Ashford to the National reserve on Mount Tacoma.

PARIS, PA.—Plans are being formulated, it is reported, for the organzation of a telephone company in this section to connect with other rural lines throughout the county. Paris is one of the points in Washington county which has no telephone connection whatever, and as lines are being built all around it, the residents are demanding telephone service and connection with the surrounding territory.

GULER, WASH.—Telephone lines are being constructed connecting the forest rangers' station at Peterson Prairie, with Guler. Peterson Prairie is about 12 miles from Guler.

CLARKSBURG, W. VA.—What is supposed to be one of the longest private lines in that section of the country, is being built by the Wheeling Gas Company, under the supervision of T. B. Lee of Washington, Pa. The line begins at Pittsburg, Pa., goes through Wheeling and Clarksburg, W. Va., and on to Lost Creek. In the construction of this line 3,500 cedar poles were used. The line is about 150 miles in length and as for the exclusive use of the Wheeling Gas Company having no connection with any other line.

CONSTANTINOPLE, TURKEY.—The Turkish Government has recently granted a concession to a syndicate composed of the French Thomson-Houston Company, Paris, the directors of the National Telephone Company, London, the British Insulated and Helsby Cables Company, Ltd., London, and the Western Electric Company, New York, for the operation of a telephone system in Constantinople and surrounding territory. The concession runs for 30 years. The construction may be done by the syndicate, but the plant must be operated by a Turkish company, the syndicate being the stockholders. The Government has the right to purchase the concession and plant, after ten years, upon a valuation placed by appraisers.

UNDERGROUND.

READING, PA.—The Metropolitan Electric Company in this city is preparing to place all its wires in the business section in underground conduit. The Bell Telephone company several years ago, it is reported, placed a considerable number of its wires underground, but still maintains considerable overhead lines. It is very likely that all wire using companies will be obliged to place their wires underground in the near future.

FORT WORTH, TEX.—An ordinance, it is reported, will soon be presented to the City Council requiring all wire using companies to place their wires in underground conduits. The ordinance is to apply to the whole city.

In the Rural Line Districts

The telephone is the thing of the day in this neighborhood. They are hauling poles and digging post holes.—*Pleasant Valley Letter in Sedalia (Mo.) Capital.*

S. E. Sperry, proprietor of the Fairfax Telephone Exchange, is having the frame building, which he now occupies, moved to the lot south temporarily, to give him room to erect a large two story building.—*Fairfax Letter in Pawhuska (Okla.) Capital.*

Ben Hough, an employee of the Butler County Telephone Co., climbed a rotten pole on the line near Andover, when it broke and fell with him. His left ankle was fractured.—*El Dorado (Kansas) Advocate.*

James B. Soule and wife will leave Sunday for Dublin, where he has accepted the foremanship of the Dublin Telephone. His mother and brother will move next week. He is a son-in-law of W. A. Binyon and has been in the employ of the Graphic-Democrat for the past 10 months. He is a first-class printer and capable of holding a good position—*Granbury (Texas) Democrat.*

It is probable that within sixty days Blanca will have an Independent telephone exchange and a service in the city that will be of some value. A. M. Potts, who was granted the franchise three weeks ago, has finally succeeded in interesting parties in the proposition that will insure the installing of a system modern in all its equipments. Mr. Potts will make a canvass of Blanca next week to secure subscribers to the new exchange and parties desiring a decent telephone service would do well to see to it that they are among the subscribers.—*Blanca (Colo.) Record.*

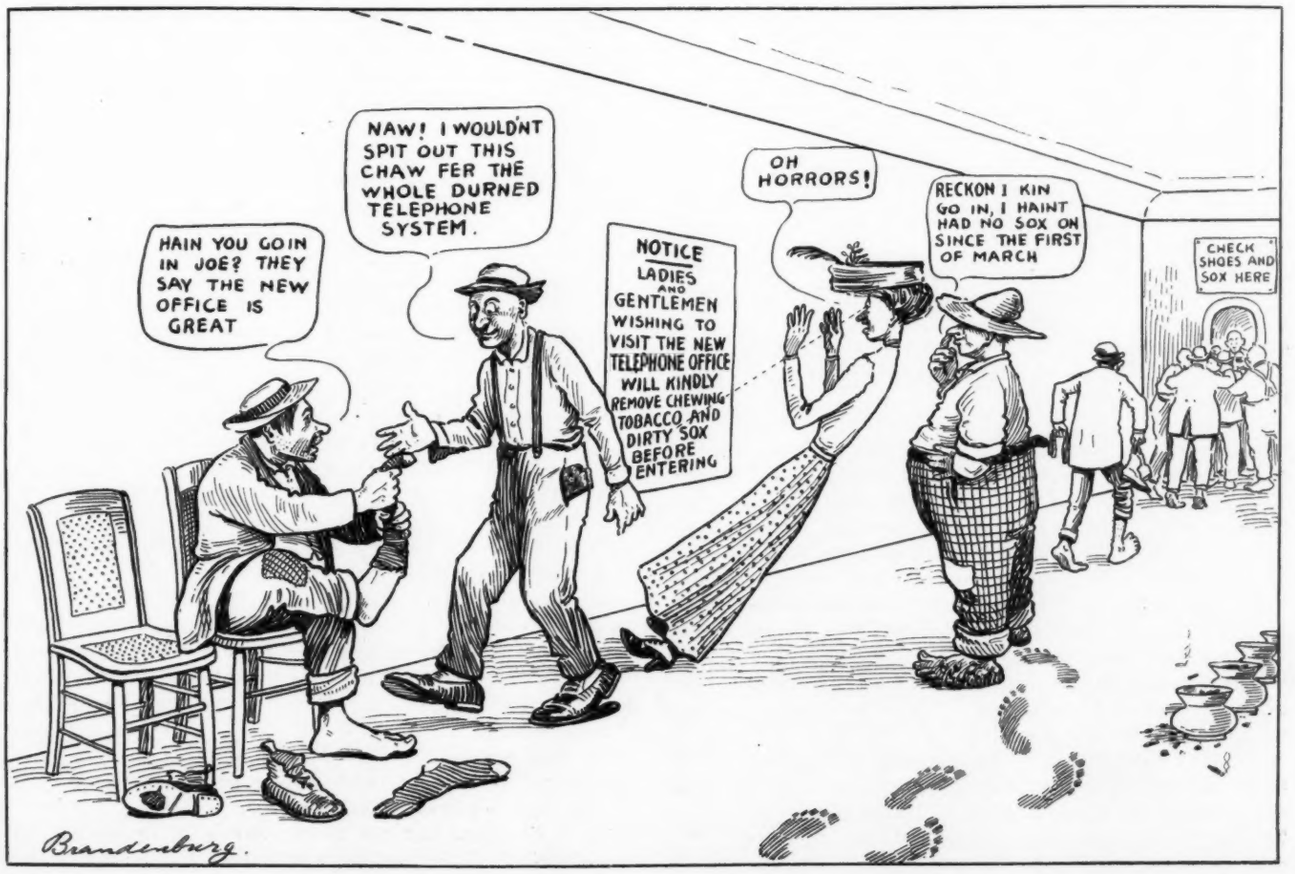
Jay King was elected president of the Farmers' Phone, and he was over the first of the week to attend to the business.—*Ada News in Minneapolis (Kansas) Messenger.*

The Farmers Union Rural Telephone System was extended last week in this section and a new phone put in at the residence of Spencer See.—*Alpena Pass (Ark.) Searchlight.*

The West Point Telephone Co. has installed phones for Jess Richison and Lee Ward.—*Coats Correspondence Vinita (Okla.) Leader.*

The Consolidated Telephone Co., has a dipping vat on the lot formerly occupied by Merwin's shop, and Monday noon while the force was at dinner the half-barrel of tar became ignited and made a big fire. A pile of cross arms near the vat were removed before they could catch fire and the flames smothered by throwing dirt into the pit and around the vat.—*Minco (Okla.) Minstrel.*

The R-O telephone line, which has been on the line K poles, severed its connection with said poles last week and now has its line on the main section line south of town.—*Spring Valley Correspondence Stillwater (Okla.) Gazette.*


HAIN YOU GOIN IN JOE? THEY SAY THE NEW OFFICE IS GREAT
NAW! I WOULDNT SPIT OUT THIS CHAW FER THE WHOLE DURNED TELEPHONE SYSTEM.
NOTICE
LADIES AND GENTLEMEN WISHING TO VISIT THE NEW TELEPHONE OFFICE WILL KINDLY REMOVE CHEWING TOBACCO AND DIRTY SOX BEFORE ENTERING
OH HORRORS!
RECKON I KIN GO IN, I HAINT HAD NO SOX ON SINCE THE FIRST OF MARCH
CHECK SHOES AND SOX HERE
Brandenburg.

The Baxter Telephone Company will move into the new and handsome quarters this week, and all callers are requested to remove chewing tobacco and dirty sox before entering the place—especially the ladies.—*Baxter (Kans.) Republican.*

Out of the Mail Bag

We all know what is commonly reported of the man from Missouri. He has to be "shown." In this practical age a better compliment to one's sagacity and sound business judgment could not be framed. We are willing to vouch for the aptness of the saying, particularly after reading a letter from Houck McHenry, former president of the Missouri Independent Telephone Association. Mr. McHenry is manager of the Capital Telephone Company, City of Jefferson, Mo., and, in writing to renew his subscription to TELEPHONY, says:

"We have no criticism to make of TELEPHONY, other than that it is all you claim for it, and it is indispensable if one desires to keep to the front in telephone matters."

Needless to say, we are glad that TELEPHONY is "showing" Missouri the goods as a telephone journal, and must commend Mr. McHenry for his appreciation of that fact.

Daniel Agnew, secretary and treasurer of the Rochester (Ind.) Telephone Company, writes TELEPHONY of the good results of a want advertisement in a recent issue, and adds: "TELEPHONY is an exceedingly interesting magazine, and particularly is J. C. Kelsey (who writes the forceful financial articles) 'onto his job.'"

No mistake about that. All telephone men—Independents and Bell men alike—are willing to admit that Mr. Kelsey is not only "onto his job," but also "onto" the Bell trust's various "ways that are dark and tricks that are vain."

H. C. O'Dell, manager of the Haskell Telephone Company, at Crowell, Texas, in sending draft for his renewal of subscription, says: "For practical information TELEPHONY is king. We couldn't think of doing without it."

Otto Dean, of Sterling, Kansas, writes in a recent letter: "The practical letters in TELEPHONY are making an interesting and helpful department, and one well worth while. The instructive papers and technical articles are text books; question and answers are what the teacher has to say, and the practical letters are lively discussions and personal opinions from members of the class. The items from the rural districts answer the purpose of having the boy in front of you sit down on a tack—namely, make the whole school laught out loud,"

Right here, the Editor desires to explain that whenever the rural page and cartoon are omitted, it is because of a press of live news matter that arrived at the hour of going to press and crowded out the other department. TELEPHONY aims to include one of Artist Brandenburg's clever illustrations every week.

A subscriber in Nashville, Tenn., who is connected with the Cumberland Bell, sends in his renewal, accompanied by a commendation that is appreciated. We print his comment on TELEPHONY but withhold his name, as we don't care to add any gray haris to the head of Leland Hume. Besides General Manager Hume might pull a few out of our subscriber. The latter says: "I feel free to say that the information that I have received from reading TELEPHONY and the pleasure derived therefrom are worth much more than the investment to me."

Another Bell man, writing to renew his subscription from an Atlantic Coast town, says. "TELEPHONY is a welcome visitor in this Bell-infested East."

C. M. H. Eycleshimer, president of the Lake Region Telephone Company, Winter Haven, Florida, sends in his check for another year's subscription to TELEPHONY, and Mr. Van Deventer's valuable book, "Telephonology," and adds: "We feel as if we could not stay in the telephone business if we didn't get TELEPHONY once a week."

From Guaymas, Sonora, Mexico, Alfred Schaefer sends in his renewal and says: "In the past year I have found your magazine of great interest."

Charles E. Guernsy, of Schaller, Iowa, in reviewing his subscription, writes: "I wish to say that I find I cannot get along without your paper, as I find something interesting and valuable in it every week.

W. S. Colville, Liskard, Ontario, writes: "Your paper is the best I have ever read, as it covers the entire field of telephone work. It has been a source of both pleasure and profit to us."

"Enclosed find order for subscription to TELEPHONY. It touches the spot," is the terse comment of G. G. Gregorie, manager of the Goodhue County (Minnesota) Telephone Company.

J. D. Breen, the manager of the Inter City Telephone Company at Yonkers, N. Y., is a loyal Independent who failed to receive an issue of TELEPHONY, and in response to a letter from this office he indited an epistle that establishes his reputation as a word-slinger, *par excellence*, as they say in Paris, Ky. Here's what he says: "After carefully perusing your favor of the 13th inst. I am forced to acknowledge that it is a very manly document. I judge from the spirit in which it is written that you wish to preserve inviolably the pre-natal existence of TELEPHONY. I am also pleased to know that I am absolved from any suspicion of unfair dealing with a publication whose influence is so much needed at this time. I trust there will be no recurrence of this temporary unpleasantness and that in future we will dwell in complete harmony. I did not receive the issue of the 14th, which may be an oversight on the part of the official entrusted with the duties incumbent upon the mailing department. That it has fallen into other hands is extremely doubtful, as I am the only individual of the name engaged in the business in this vicinity whose corporate body is not resting securely in the digestive organs of that 'octopus' whose voracious proclivities seem to be composed of an insatiable nature, wonderful to behold. With best wishes for your success in upholding the banner of Telephone Independence, I remain," etc.

Here's hoping that Brother Breen will continue to reside outside the digestive organs of said octopus, and always remain able to take a kick at the same.

W. B. Reed, manager of the Coffey County (Kansas) Telephone Company, writes: "We are always anxious for our number of TELEPHONY to arrive, and all read it through and through, and gain much from its practical ideas."

"I have enjoyed TELEPHONY very much and wish you every success," writes Chas. E. Warner, of New York City.

Sam H. Shutt, of the United Telephone Company, Austin, Tex., which, by the way, displays the Independent Shield on its letterheads, renews his subscription to TELEPHONY, and adds: "You have my best wishes for the splendid success you deserve in the Independent telephone field."

Writing from Deposit, N. Y., L. D. Bailey says: "As near as I can remember my subscription to TELEPHONY expires about May 1, so I am sending the renewal to be on the safe side. It doesn't seem as though any one could get along without TELEPHONY who does much telephone work."

In sending in a change of address, I. L. Thomas, Louisville, Neb., says: "I can't afford to miss a single issue of the paper, so don't be offended if I am a little urgent. I remain a well-pleased subscriber."

W. C. Wright, manager of the Home Telephone Co. at Woodruff, S. C., in making remittance for another year's subscription, writes: "We are always glad to get TELEPHONY."